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Evaluation of gaps to understand needs for HA/DR: a case for USMC readiness metrics

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NAVAL POSTGRADUATE SCHOOL

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THESIS

EVALUATION OF GAPS TO UNDERSTAND NEEDS FOR HA/DR: A CASE FOR USMC READINESS METRICS

by

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March 2018

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13. ABSTRACT (maximum 200 words)

The primary goal of this research is to identify and evaluate gaps to understand the need for defining and developing readiness metrics for the United States Marine Corps (USMC) in information/knowledge management (I/KM) and needs assessments (NA). The primary research question is: How can the USMC better complete NA and I/KM activities in support of humanitarian operations? Research methods included education from formal training courses, a review of relevant literature, analysis of four historical case studies from 2010 to 2015, and personal interviews with prominent members in the field. This research examines USMC-unique capabilities to explain how the USMC can best fulfill its role, within the frameworks established by humanitarian organizations, in the most efficient and effective manner. We offer specific refinements to guide Marines in future planning of NA and I/KM efforts. In applying these refinements, Marine planners must tailor traditional practices with a shift in perspective from militant to humanitarian, wherein the USMC will serve as a supporting effort within a much larger international response. No two humanitarian responses can be the same; nevertheless, the well-grounded findings of this research related to NA and I/KM offer a basis of understanding for USMC planners to apply in any foreign natural HA/DR setting.

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EVALUATION OF GAPS TO UNDERSTAND NEEDS FOR HA/DR: A CASE FOR USMC READINESS METRICS

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ABSTRACT

The primary goal of this research is to identify and evaluate gaps to understand the need for defining and developing readiness metrics for the United States Marine Corps (USMC) in information/knowledge management (I/KM) and needs assessments (NA). The primary research question is: How can the USMC better complete NA and I/KM activities in support of humanitarian operations? Research methods included education from formal training courses, a review of relevant literature, analysis of four historical case studies from 2010 to 2015, and personal interviews with prominent members in the field. This research examines USMC-unique capabilities to explain how the USMC can best fulfill its role, within the frameworks established by humanitarian organizations, in the most efficient and effective manner. We offer specific refinements to guide Marines in future planning of NA and I/KM efforts. In applying these refinements, Marine planners must tailor traditional practices with a shift in perspective from militant to humanitarian, wherein the USMC will serve as a supporting effort within a much larger international response. No two humanitarian responses can be the same; nevertheless, the well-grounded findings of this research related to NA and I/KM offer a basis of understanding for USMC planners to apply in any foreign natural HA/DR setting.

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LIST OF ACRONYMS AND ABBREVIATIONS

ACAPS	Assessment Capacities Project
AFP	Armed Forces of the Philippines
AIM	Assessment and Information Management
AO	Area of Operation
APAN	All Partners Access Network
BACC	Bilateral Assistance Coordination Cell
BCC	Bilateral Coordination Council
CA	Cluster Approach
CBIRF	Chemical-Biological Incident Response Force
CMSF	Consequence Management Support Force
COD	Common Operational Datasets
DALA	Damage and Loss Assessment
DART	Disaster Assistance Response Team
DJC2	Deployable Joint Command and Control
DoD	Department of Defense
DoS	Department of State
DRRS-MC	Defense Readiness Reporting System–Marine Corps
ECCS	Expeditionary Command and Control Suite
FHA	Foreign Humanitarian Assistance
GOH	Government of Haiti
GOJ	Government of Japan
HA	Humanitarian Assistance
HACC	Humanitarian Aid Coordination Center
HA/DR	Humanitarian Assistance and Disaster Relief
HART	Humanitarian Assistance Response Training
HAST	Humanitarian Assistance Survey Team
HN	Host Nation
HO	Humanitarian Organization
HRNA	Human Recovery Needs Assessment
HRR	Humanitarian Response Review

HUMOCC	Humanitarian–Military Operations Coordination Centre
HQMC	Headquarters Marine Corps
IASC	Inter-Agency Standing Committee
ICCM	Inter-Cluster Coordination Mechanism
IDP	Internally Displaced Person
I/KM	Information and Knowledge Management
IO	International Organization
ISR	Intelligence, Surveillance, and Reconnaissance
JFLCC	Joint Force Land Component Commander
JHAST	Joint HAST
JHOC	Joint Humanitarian Operations Course
JOTC	Joint Operations and Tasking Center
JSDF	Japan Self-Defense Force
JSOTF-P	Joint Special Operations Task Force - Philippines
JTF	Joint Task Force
LNO	Liaison Officer
MAGTF	Marine Air-Ground Task Force
MARFOR	Marine Corps Forces
MARFORPAC	Marine Forces Pacific
MCO	Marine Corps Order
MCCLL	Marine Corps Center for Lessons Learned
MCPP	Marine Corps Planning Process
MCT	Marine Corps Task
MCTL	Marine Corps Task List
MET	Mission Essential Task
METL	Mission Essential Task List
METOC	Meteorological and Oceanographic
MEB	Marine Expeditionary Brigade
MEF	Marine Expeditionary Force
MEU	Marine Expeditionary Unit
MIRA	Multi-Sector Initial Rapid Assessment
MITAM	Mission Tasking Matrix

MINUSTAH	U.N. Stabilization Mission in Haiti
MNCC	Multinational Coordination Center
MNMCC	Multinational Military Coordination Center
MSIDS	MAGTF Secondary Imagery Dissemination System
NA	Needs Assessment
NDRRMC	National Disaster Risk Reduction and Management Council
NGO	Non-Governmental Organization
NIPR	Non-Secure Internet Protocol Router
NMCI	Navy and Marine Corps Intranet
NMO	Non-Military Organization
NTISR	Non-Traditional Intelligence, Surveillance, and Reconnaissance
OCHA	Office for the Coordination of Humanitarian Affairs
OFDA	Office of Foreign Disaster Assistance
ODA	Operational Detachment - Alpha
OHDACA	Overseas Humanitarian, Disaster, and Civic Aid
OSD-P	Office of the Secretary of Defense, Under Secretary of Defense for Policy
OSINT	Open-Source Intelligence
PDNA	Post Disaster Needs Assessment
RFI	Request for Information
RMT	Response Management Team
SOP	Standard Operating Procedure
U.N.	United Nations
UNDAC	U.N. Disaster Assessment and Coordination
UNS	Universal Needs Statement
U.S.	United States
USAF	U.S. Air Force
USAID	United States Agency for International Development
USFJ	U.S. Forces Japan
USG	Unites States Government
USMC	United States Marine Corps
U.S. PACOM	U.S. Pacific Command

U.S. SOUTHCOM	U.S. Southern Command
Virtual OSOCC	Virtual On-Site Operations Coordination Center
VOCO	Verbal Orders of the Commanding Officer
WFP	World Food Program

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I. INTRODUCTION

The Department of Defense (DoD) mandates the United States Marine Corps (USMC), and all United States (U.S.) armed forces, to conduct, support, and lead stability operations with a level of proficiency equivalent to combat operations (Department of Defense [DoD], 2009). The USMC prepares and trains to support humanitarian assistance and disaster relief (HA/DR) operations on a regular basis. The USMC prepares for HA/DR through deployment of the Marine Expeditionary Unit (MEU) and other Marine Air Ground Task Force (MAGTF) elements. Training and readiness for such HA/DR missions require the assigned mission-essential tasks (METs) to be completed. We study and propose readiness metrics for HA/DR operations to reduce redundancy in training and increase efficiency and effectiveness in supporting the humanitarian missions for the USMC. The following is our primary research question: What are the guiding principles for the USMC in support of HA/DR operations? Our secondary research question is as follows: What can the USMC do to better prepare for HA/DR operations? We focus on information and knowledge management (I/KM) and needs assessments (NAs) and make recommendations for further research into the other essential capabilities of humanitarian operations.

A. BACKGROUND

From 1996 to 2015, 1,346,196 deaths were caused by natural disasters throughout the world (Center for Research on the Epidemiology of Disasters [CRED], n.d.). Mass destruction from natural disasters is a familiar reality for many of the most vulnerable countries. For example, the Republic of the Philippines was impacted by 88 typhoons between 2004 and 2014, which caused USD $13.7 billion in damages and over 18,000 deaths (Center for Excellence in Disaster Management and Humanitarian Assistance [CFE-DMHA], 2015). Furthermore, these disasters have been on the rise. In 1970, 81 natural disasters occurred per continent; by 2015, that number had risen to 346 (Apte, Goncalves, & Yoho, 2016). The United States has responded to this upward trend with increased funding and action in humanitarian operations. U.S. expenditures for humanitarian

assistance in 2012 were over $3.8 billion (Apte et al., 2016). Secretary of Defense Robert Gates said in 2007,

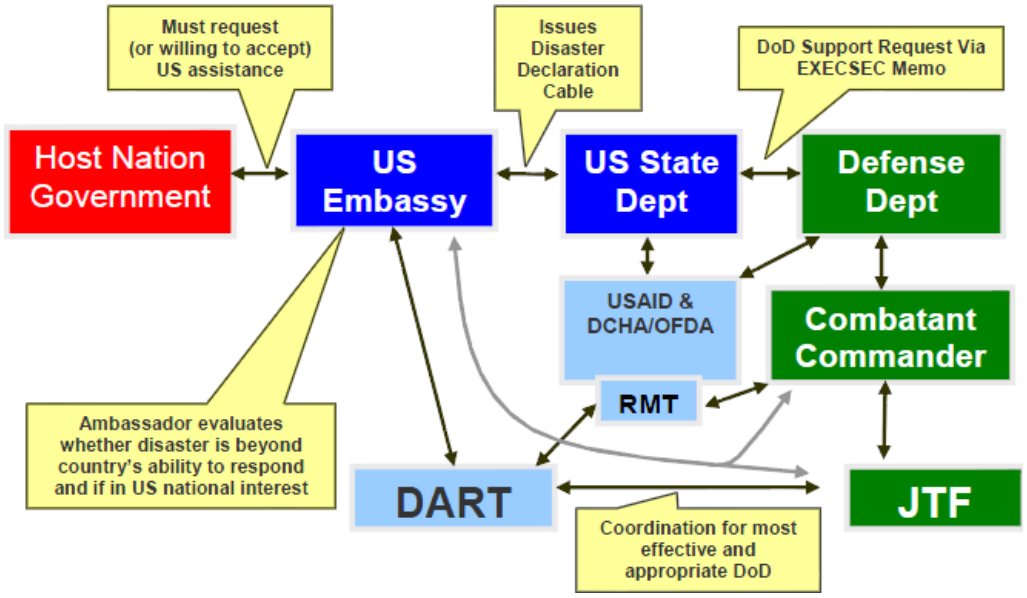
> Until our government decides to plus up our civilian agencies like the Agency for International Development (USAID), Army soldiers can expect to be tasked with reviving public services, rebuilding infrastructure, and promoting good governance. All these so-called "nontraditional" capabilities have moved into the mainstream of military thinking, planning, and strategy—where they must stay. (Humanitarian Assistance Response Training [HART] course, personal communication, September 26–29, 2017)[1]

USAID's mission, established in 1961, is to "partner to end extreme poverty and promote resilient, democratic societies while advancing our security and prosperity" (U.S. Agency for International Development [USAID], 2017a). Within USAID is the U.S. Office of Foreign Disaster Assistance (OFDA). OFDA is the lead federal agency responsible for the organization and management of foreign disaster assistance (Joint Humanitarian Operations Course [JHOC], personal communication, September 18–19, 2017).[2] Military organizations are requested to support an HA/DR operation only if a unique capability is required, civilian organizations have been overwhelmed with high demand, or civilian authorities request assistance (JHOC, personal communication, September 18–19, 2017). It is important to remember that DoD support is not the first resort of the United States government (USG), but when necessary, the DoD plays a crucial role in the ability of the USG to provide appropriate disaster relief. OFDA responds to an average of 65 disasters in over 50 countries each year (USAID, 2017b), of which the DoD has supported around 5% historically (Wilhelm, 2015). Figure 1 provides an overview of the process to request USG assistance and DoD support.

[1] This information comes from the author's class notes while attending the Humanitarian Assistance Response Training course at the Ford Island Conference Center in Honolulu, HI, from September 26–29, 2017. The course was presented by the Center for Excellence in Disaster Management and Humanitarian Assistance and was sponsored by U.S. Pacific Command.

[2] This information comes from the author's class notes while attending the Joint Humanitarian Operations Course at the Naval Postgraduate School in Monterey, CA. The course was presented by the U.S. Agency for International Development, U.S. Office for Foreign Disaster Assistance, and was sponsored by the Center for Civil-Military Relations, Naval Postgraduate School.

Figure 1. Interagency Coordination Flow When OFDA and DoD Respond.
Source: Wilhelm (2015).



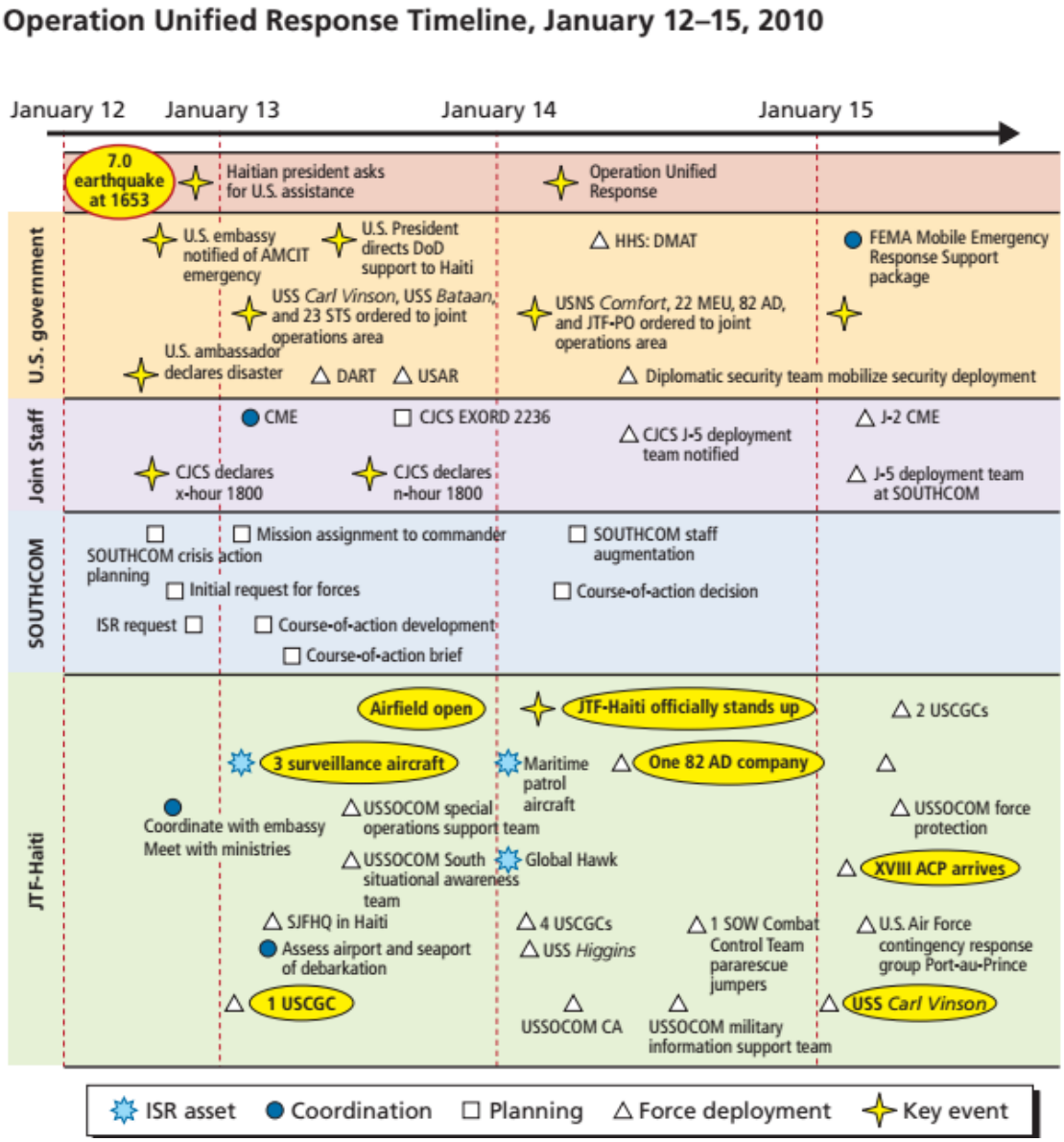
The DoD plays an invaluable role in providing worldwide support in response to HA/DR operations and utilizes the USMC as a key responder. Due to expeditionary and littoral specialties, the Marine Corps is especially well suited for HA/DR operations. Recent examples in which a USMC unit was the main effort of a HA/DR Joint Task Force (JTF) include the 2010 earthquake in Haiti, 2011 tsunami in Japan, 2013 typhoon in the Philippines, and 2015 earthquake in Nepal. These natural disasters in the recent past provide significant data on the USG and DoD responses and an opportunity for the USMC to hone its ability to support future HA/DR operations. If the USMC continues to support HA/DR operations in the future, it should strive to achieve efficiency and effectiveness by applying lessons learned from these operations and the humanitarian field. Major limitations of the USMC include limited organizational knowledge on how to conduct NA and I/KM within the context of HA/DR rather than combat operations. We seek to derive recommendations in order to address this major limitation based on the four disasters previously mentioned.

1. Haiti Earthquake 2010: Operation Unified Response

On January 12, 2010, a 7.0 magnitude earthquake struck one of the poorest countries in the Western Hemisphere with an epicenter approximately 14 miles southwest of Port-au-Prince, Haiti. The destruction and effects were widespread and devastating to both the local population and the government of Haiti (GOH). Up to 3.9 million people within a 41-mile radius were affected with moderate to severe damage (Marine Corps Center for Lessons Learned [MCCLL], 2010). Initial estimates included 230,000 dead, 300,000 injured, and over one million displaced, including 45,000 Americans. Furthermore, the earthquake caused widespread destruction to the infrastructure, rendered the majority of air and sea transport facilities inoperable, and devastated the already marginal power grid where there was a lack of petroleum reserves for generators (DiOrio, 2010). Hours later, President Rene Preval of Haiti declared a state of emergency and requested assistance from the United States and international community. The U.S. interagency coordination flow in response to the Haitian request for assistance is depicted in Figure 1.

The international community responded to relief demands with overwhelming support. The U.S. ambassador to Haiti issued a disaster declaration confirming the disaster and recommended USG assistance. U.S. President Barack Obama received the request and declared U.S. relief efforts to Haiti a priority, with the USAID designated as the lead agency (MCCLL, 2010). Admiral Michael Mullen, chairman of the Joint Chiefs of Staff, issued an executive order on January 13, 2010, authorizing the U.S. military to provide HA/DR support designated as Operation Unified Response (Cecchine et al., 2013). U.S. Southern Command (U.S. SOUTHCOM) stood up Joint Task Force Haiti (JTF-H) and assigned its deputy commander, Lieutenant General (LTG) Ken Keen, as the commander of JTF-H. At the peak of operations, the U.S. military response included more than 22,200 U.S. military personnel, 33 U.S. Navy and U.S. Coast Guard ships, and more than 300 fixed and rotary wing aircraft (Cecchine et al., 2013). U.S. actions taken within the first three days in response to the earthquake in Haiti are depicted in Figure 2.

Figure 2. U.S. Actions Taken in First Three Days in Response to Haiti Earthquake. Source: Cecchine et al. (2013).



In addition to the U.S. military, more than 43 other militaries from around the world assisted in providing relief, including medical and rescue teams from Canada, Russia, France, Chile, Peru, Jamaica, Brazil, Colombia, Cuba, Iceland, Sri Lanka, China, and Korea. In total, over 140 nations and more than 500 non-governmental organizations (NGOs) and private organizations responded to Haiti with special teams and supplies, even with little to no knowledge of the relief resources available prior to arrival in Haiti

(Cecchine et al., 2013; DiOrio, 2010) However, the international response did not come without turmoil.

With such a large international response, coordination and collaboration in the first few days was chaotic at best. The United States was accused by Venezuela, Cuba, Bolivia, and Nicaragua of attempting to occupy Haiti, but the United States rejected the allegations by stating they were explicitly there by "invitation of the Haitian Government" (DiOrio, 2010, p. 3). However, the United Nations (U.N.) established control by designating the United States as the lead responsible for ports, airports, and roads for distribution of humanitarian assistance (HA) while the U.N. remained responsible for law and order. As the lead organization designated by the USG, USAID utilized OFDA to establish an NGO coordination cell. However, "limited personnel, insufficient resources, bureaucratic hurdles and diverse political agendas amongst the agencies" hindered its responsiveness and effectiveness (DiOrio, 2010, p. 4).

2. Japan Earthquake and Tsunami 2011: Operation Tomodachi

On March 11, 2011, a 9.0 magnitude earthquake occurred approximately 80 miles off the shore of Sendai, Japan. Sendai is located on the eastern coast of Honshu Island, Japan's main island. In less than one hour, enormous tsunami waves pushed up to six miles inland, devastating an area of more than 348 square miles. The affected population included 14.8 million people, with 129,500 houses destroyed and 265,432 homes severely damaged (Moroney, Pezard, Miller, Engstrom, & Doll, 2013). Approximately 1.4 million homes were left without running water and 1.25 million without electricity. The combined earthquake and tsunami damaged over 2,000 roads, 56 bridges, and 26 railways. Additionally, the communications infrastructure was severely impacted, including 2,000 transmission stations for mobile phones destroyed, which "inhibited early estimates of the extent of the damage" (Moroney et al., 2013, p. 88). Six months after the disaster, the government of Japan (GOJ) determined the combined earthquake and tsunami resulted in over 16,000 deaths, 5,000 other injuries, 4,647 people unaccounted for, and 131,000 people still displaced (Moroney et al., 2013).

In addition to this destruction, the Fukushima Daiichi nuclear power plant suffered major damage, creating another disaster in and of itself. The earthquake caused power outages at the plant, and the subsequent tsunami caused significant flooding at the plant and rendered the backup generators inoperable. Without any means of power, the cooling system required for the nuclear reactors failed and resulted in several explosions and the release of radiation (Carafano, 2011).

Japan's internal response to the disaster highlights the comparative difference between a developed nation and many of the underdeveloped nations struck by natural disasters. The combination of the earthquake, tsunami, and nuclear disaster were unprecedented for Japan and anything the world had experienced up to that point. Unlike many countries struck by a natural disaster, Japan was able to provide much of its own relief and requested comparatively little support from other nations for such a chaotic event. Within the first week, Japan deployed 100,000 personnel, more than 500 fixed and rotary wing aircraft, and 60 ships (Moroney et al., 2013). The Japan Civil Network for Disaster Relief in East Japan served as organizer and lead agency. This group coordinated over 300 organizations, including GOJ agencies, NGOs, and civil organizations (Moroney et al., 2013).

The international response to the Japan earthquake was overwhelming. At the request of Japan, a U.N. Disaster Assessment and Coordination team assisted the GOJ with coordinating international assistance and limiting unsolicited contributions (Moroney et al., 2013). Within the first three days, 91 countries and nine international organizations (IOs) offered assistance. Within three weeks, the Japanese Red Cross received more than $1 billion in donations (Moroney et al., 2013).

On March 11, Japan declared a national disaster and requested support from the United States. The DoD announced Operation Tomodachi, meaning *friends*, which continued until May 1, 2011. The GOJ initially requested support from the United States including search and rescue teams, airlift capacity, and nuclear subject matter experts (Moroney et al., 2013). By April 2011, the United States had provided $95 million in humanitarian funding to Japan: $88 million from the DoD and $7 million from USAID/OFDA in response to the disaster (Moroney et al., 2013). On March 11, U.S.

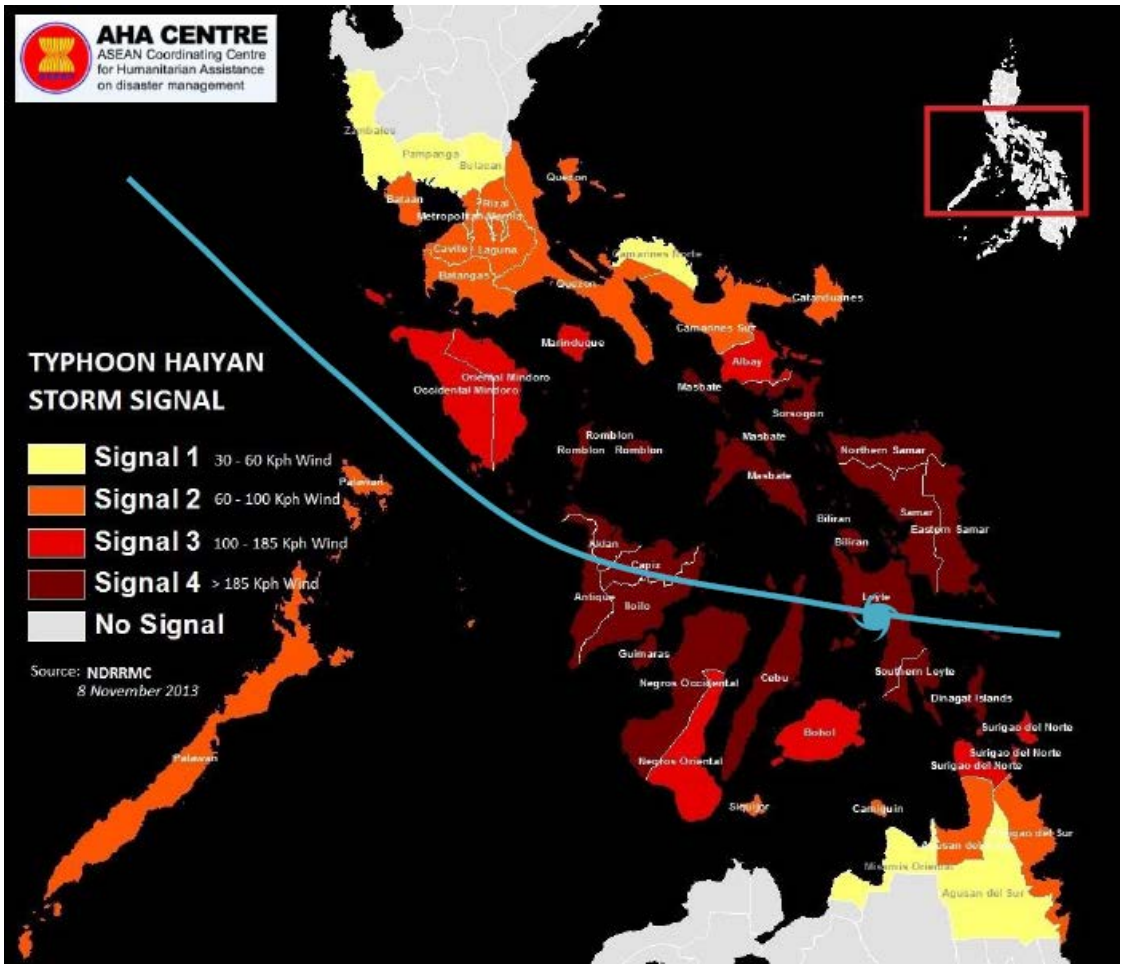
Pacific Command (U.S. PACOM) released a task order designating the commander, U.S. Forces Japan (USFJ), as the supported operational commander to provide foreign humanitarian assistance to Japan. However, USFJ contained no operational planning capability. U.S. PACOM provided a forward command element to USFJ and subsequently established multiple organizations: JTF-505 for phased evacuations of American citizens and designated foreign nationals; Joint Support Force Japan (JTF-519) for HA/DR support; and a Consequence Management Support Force (CMSF) for the nuclear crisis (Moroney et al., 2013).

3. Philippines Typhoon Haiyan (Yolanda) 2013: Operation Damayan

Category 5 Super Typhoon Haiyan, also known as Yolanda, made landfall over the Visayas region of the Philippines on November 8, 2013 (Luckey, 2014). Filipino communities were still recovering from a 7.2 magnitude earthquake in the region on 15 October and a civil conflict in the Mindanao region (Luckey, 2014). These recent events depleted the country's emergency supply stores and destabilized the area. Local Filipino governments were advised to conduct evacuations of coastal regions, which included 70,000 people residing in temporary shelters after displacement as a result of the October 15 earthquake. As of 6:00 a.m. on November 8, 125,604 people were successfully evacuated (CFE-DMHA, 2014). Shipping and commercial travel in and out of the Philippines were cancelled on November 7 in anticipation of the typhoon's arrival. When Haiyan delivered up to 200 mph winds with gusts of 225 mph, damage to infrastructure was widespread and disastrous (Parker, Carroll, Sanders, King, & Chiu, 2015). Much of this damage was amplified by flooding caused by heavy rains of over one inch per hour and a storm surge of over 23 feet (CFE-DMHA, 2014). The storm affected nine out of the nation's 17 regions (CFE-DMHA, 2014). The regions of Leyte and Samar received the heaviest damage, with the city of Tacloban losing as much as 90% of its infrastructure (Parker et al., 2015). Figure 3, which comes from one of the earliest situational reports, shows the path of the storm (Association of Southeast Asian Nations Coordinating Centre for Humanitarian Assistance [AHA Centre], 2013). This disaster claimed the lives of 6,293 people, with 28,689 injured and 4 million people displaced (Parker et al., 2015). Over one

million houses were damaged, with more than half of these completely destroyed (Parker et al., 2015).

Figure 3. Forecasted Path of Typhoon Haiyan. Source: AHA Centre (2013).



The Philippine government issued a request for humanitarian assistance on November 10, only a day after the storm made landfall (Bautista, 2013). Three U.N. Disaster Assessment Coordination (UNDAC) teams were deployed to conduct needs assessments (AHA Centre, 2013). President Benigno Aquino officially declared a state of national calamity on November 11. On the same day as this declaration, USAID began delivering supplies to Villamore airbase in the capital city of Manila. The distribution of this aid is no small task with over 7,000 islands making up the Republic of the Philippines.

Aid was delivered to the island of Luzon, which was largely spared from the storm's destruction. The international community banded together, with assistance coming from 57 countries, 29 foreign militaries, and NGOs from around the globe (CFE-DMHA, 2014). However, phasing the combined international assistance takes time. Therefore, DoD assistance was requested in order to rapidly respond to the lack of immediate response capabilities available. Unique DoD contributions included mainly heavy lift capabilities, access to remote locations, and rapid deployment of these capabilities (CFE-DMHA, 2014).

Marine Forces Pacific (MARFORPAC) was designated as the lead for the military effort within U.S. PACOM. 3d Marine Expeditionary Brigade (MEB) was designated as the mission commander until JTF-505 was established on 16 November with Lieutenant General Wissler, commanding general, III Marine Expeditionary Force (MEF), designated as the joint forces commander (JFC) (Luckey, 2014). JTF-505 became fully operational capable on November 20. The joint forces included the USS *George Washington* and parts of Carrier Strike Group (CSG) 5 (Parker et al., 2015). After only six days of full operational capability, the JTF commander reported on November 26 that the humanitarian community was prepared to continue aid efforts without DoD assistance or unique DoD capabilities. Philippine relief efforts transitioned to recovery efforts within two weeks of the disaster (CFE-DMHA, 2014). The JTF was finally disestablished after completing its transition on December 1. The JTF relief effort included 13,400 military personnel, 66 aircraft, and 12 U.S. Navy (USN) vessels. These assets successfully delivered 2,495 tons of supplies and evacuated over 21,000 people throughout roughly 450 locations by completing over 1,300 air sorties (Parker et al., 2015). Much of the humanitarian community agrees that the civil-military coordination that occurred in support of the Typhoon Haiyan relief was extremely successful and possibly the best in recent history (CFE-DMHA, 2014).

4. Nepal Earthquake 2015: Operation Sahayogi Haat

The most recent large-scale USMC HA/DR operation was Operation Sahayogi Haat conducted in response to the 2015 Earthquake in Nepal. On April 25, 2015, a 7.8 magnitude earthquake struck near Barpak, Gorkha District, Nepal, approximately 109

miles northwest of the nation's capital of Kathmandu. On May 12, a 7.2 magnitude aftershock also struck near Kathmandu in the Dolakha district, with the epicenter approximately 50 miles northeast of the nation's capital. The epicenter of this aftershock was located only 10 miles beneath the earth's surface, and its seismic shaking was increased by the soft soils of the heavily populated Kathmandu Valley. Hundreds of other aftershocks over a 4.0 magnitude occurred throughout the region, further increasing the destruction and complicating relief efforts. These earthquakes caused as many as 5,000 landslides, many of which diverted rivers and streams, flooding low-lying areas in the region. The widespread destruction of infrastructure was compounded by the loosely enforced building codes and high levels of poverty throughout the affected region. In the months following these events, it was estimated that the total destruction included 8,841 deaths, 22,309 injuries, and destruction of or damage to 887,356 homes. Table 1 lists the total destruction caused in this disaster (CFE-DMHA, 2016; Troutman, 2016).

Table 1. Nepal Earthquake Destruction Statistics. Source: CFE-DMHA (2016).

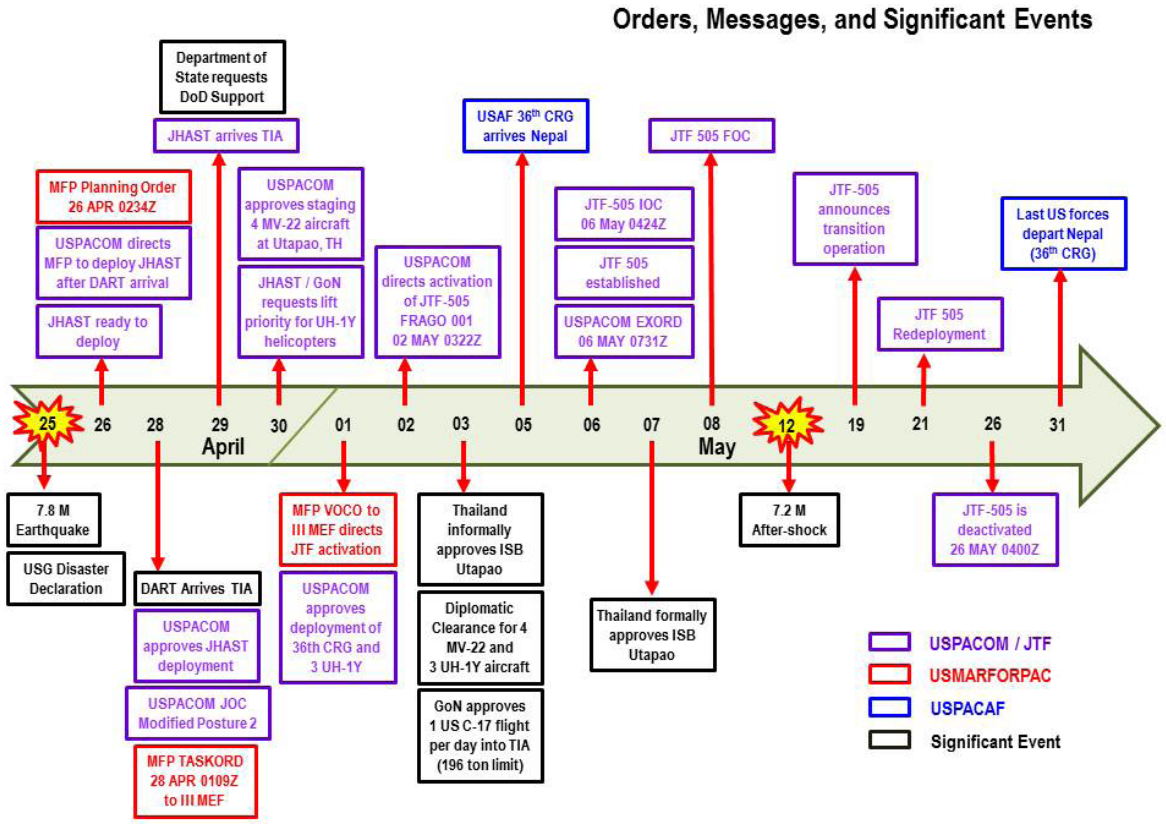
Number of Heavily Affected Districts	14 (National Planning Commission, 2015)
Population Affected	8 Million (National Planning Commission, 2015)
Number of Fatalities	8,841 Reported (Ministry of Home Affairs, 2015)
Number of Injuries	22,309 (Ministry of Home Affairs, 2015)
Most Affected Sectors	Social, Productive, Infrastructure
Number of Private Houses Fully Damaged	602,257 (Ministry of Home Affairs, 2015)
Number of Private Houses Partially Damaged	285,099 (Ministry of Home Affairs, 2015)
Estimated Overall Damage	$174 Million USD (National Planning Commission, 2015)
Estimated Overall Impact (Damages and Losses)	About 1/3 of GDP (National Planning Commission, 2015)

On April 25, the government of Nepal (GON) declared a state of emergency and requested assistance from the international community. The overall international response included military assistance from 34 countries (CFE-DMHA, 2016) with India, China, and the United States serving as the three largest contributors. The primary contributing

international organizations (IOs) included the World Health Organization, World Food Program, American Red Cross, U.N. Office for the Coordination of Humanitarian Affairs (OCHA), and hundreds of others. Nepal requested $422 million in funding to support relief efforts, which was met with a resounding response including over $64 million in funding from the USG (USAID, 2015).

The DoD responded quickly to Nepal's requests for assistance. Although separated by over 2,500 miles from Okinawa, Japan, MARFORPAC led the U.S. PACOM response to the disaster. U.S. PACOM stood up JTF-505 on May 1 and appointed III MEF Commanding General (CG) Lieutenant General Whissler as the commander of JTF-505. The first Mission Tasking Matrix (MITAM) from USAID was released on April 29 and included a request to deploy a Humanitarian Assistance Survey Team (HAST) to conduct needs assessments in coordination with the USAID Disaster Assistance Response Team (DART). This HAST team was intended to "advise on DoD capabilities and assets that could support the response" (Bock, 2016, p. 44). In response, 3d MEB immediately deployed a 22-member HAST, which met the DART in Kathmandu on April 29. JTF-505 successfully completed a total of 25 MITAMS in support of USAID and concluded Operation Sahayogi Haat on May 26, 2015 (Bock, 2016, p. 44). The overarching mission, as defined in these MITAMs, focused on airfield logistics and provision of rotary wing assets to transport supplies and personnel to and from remote areas. Key challenges associated with Operation Sahayogi Haat included the logistical burden of covering the distance from Okinawa to Kathmandu, overcoming the technical mountainous terrain of Nepal to reach remote areas affected by the disaster, and the political challenges of receiving overflight permissions and conducting operations within strictly defined areas of operation (AOs) dedicated solely to India, China, and the United States (CFE-DMHA, 2016). The severity of these challenges was punctuated by the tragic death of six Marines, two Nepalese soldiers, and five Nepalese citizens in a UH-1Y helicopter crash on May 12 (Troutman, 2016). Furthermore, the establishment of an intermediate support base was required in U-Tapao, Thailand, to facilitate the numerous flights generated throughout the Pacific and arriving in Kathmandu. The timeline of U.S. PACOM's response during Operation Sahayogi Haat is depicted in Figure 4.

Figure 4. U.S. PACOM Significant Events. Source: CFE-DMHA (2016).



At the completion of Operation Sahayogi Haat, JTF-505 successfully delivered 113.8 short tons of aid, transported 63 casualties, flew 152 sorties, and provided airfield logistics supporting 1,813 short tons of aid from 63 flights (CFE-DMHA, 2016).

B. MOTIVATION

With the increasing number of disasters, both natural and manmade, around the world, the USMC is positioned as a force in readiness to respond to those disasters. Disasters create a demand that is generally inherent for USMC Marine Air-Ground Task Force (MAGTF) commanders to support, and therefore, the disasters serve as opportunities to save lives and alleviate human suffering. Although there exists a significant amount of academic research on HA/DR operations, very little research addresses military support of those operations. Additionally, the USMC develops readiness standards with the primary

goal of conducting combat operations. Although there is an inherent overlap in requirements to support combat operations and HA/DR operations, we recognize that there is a potential gap in relevant literature. We aim to analyze the USMC role in information and knowledge management (I/KM) and needs assessment (NA) competencies in supporting HA/DR operations to recommend strategic-level capabilities required of the USMC to support such operations in the future.

C. METHODOLOGY

1. Scope

The scope of our research is limited to foreign, natural, sudden onset, and localized disasters in which the USMC supported relief efforts. Additionally, we limited the scope of our data collection to recent disasters, those occurring between 2010 and 2017, and eliminated disasters in which insufficient information was available to conduct analysis, such as the Thailand flood of 2011. Therefore, the data analysis specifically includes the following four disasters: 2010 Haiti earthquake, Operation Unified Response; 2011 Japan earthquake and tsunami, Operation Tomodachi; 2013 Philippines Typhoon Haiyan (Yolanda), Operation Damayan; and 2015 Nepal earthquake, Operation Sahayogi Haat. Lastly, the scope of our research was narrowed to data pertaining specifically to the NA and I/KM competencies and USMC capabilities to support those competencies.

2. Data and Analysis

Research began with a thorough literature review to gain a baseline understanding of previous research, doctrine, and publications in the humanitarian field related to DoD HA/DR operations, I/KM, and NA. These four disasters are analyzed for HA/DR operations using open source USMC after action/lessons learned reports, government fact sheets, case studies, and other organizational analysis from throughout the humanitarian field. Furthermore, the cases are analyzed through first-hand knowledge attained after completion of both the Humanitarian Assistance Response Training (HART) and Joint Humanitarian Operations Course (JHOC), as well as personal interviews conducted with USAID/OFDA and Center for Excellence in Disaster Management and Humanitarian Assistance (CFE-DMHA) staff. We seek to identify best practices and shortfalls of the

USMC in NA and I/KM during these operations in order to refine the role of the USMC in responding to future HA/DR operations. We compare identified gaps in response to strengths and capabilities of the USMC to determine its most effective employment for I/KM, and determine critical information required for the NA process. Our primary research question is, what are the guiding principles for the USMC in support of HA/DR operations? Our secondary research question is, what can the USMC do to better prepare for HA/DR operations?

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II. LITERATURE REVIEW

A. HUMANITARIAN DISASTERS

The definition of a natural disaster is not consistent throughout the literature. One frequently used definition for a natural disaster is any natural event that results in 100 human deaths, 100 human injuries, or U.S. $1 million in economic damages (Hewitt & Sheehan, 1969). Joint Publication 3-29 defines a *disaster* as

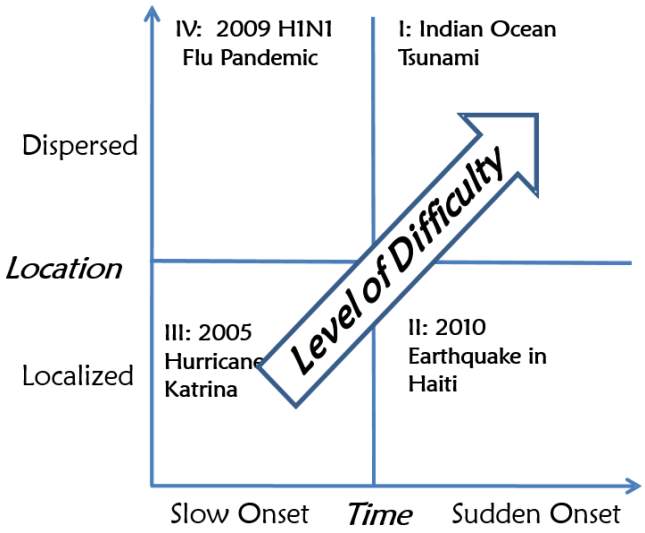
> a calamitous situation or event that occurs naturally (such as earthquakes, storms, droughts, volcanic eruptions, wildfires) or through human activities (such as industrial explosions or fires, civil strife, infectious disease) which threatens or inflicts human suffering on a scale that may warrant emergency relief assistance from the U.S. [government] or from foreign partners. (Chairman of the Joint Chiefs of Staff [CJCS], 2014, p. I-4)

Furthermore, Joint Publication 3-29 defines *foreign disaster relief* as

> assistance that can be used immediately to alleviate the suffering of foreign disaster victims that normally includes services and commodities as well as the rescue and evacuation of victims; the provision and transportation of food, water, clothing, medicines, beds, bedding, and temporary shelter; the furnishing of medical equipment, medical and technical personnel; and making repairs to essential services. (CJCS, 2014, p. GL-7)

Humanitarian disasters are typically classified as natural or manmade disasters. Disasters are further classified as localized or dispersed, and as slow or sudden (Apte, 2009). The different combinations of these and other characteristics make humanitarian operations inherently chaotic and difficult to plan. Figure 5 illustrates how the level of difficulty in relief efforts required exponential increases during sudden disasters, dispersed over large areas such as with the Indian Ocean tsunami in 2004.

Figure 5. Classification of Disasters Based on Location and Time.
Source: Apte (2009).

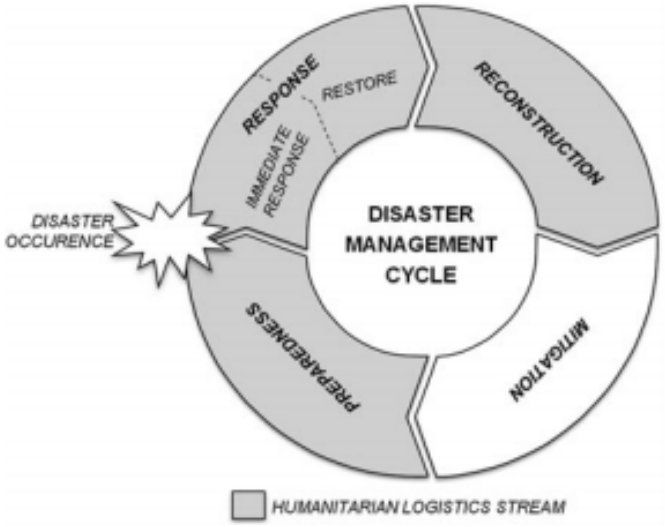


B. HUMANITARIAN OPERATIONS

DoD Joint Publication 3-29 defines *foreign humanitarian assistance* (FHA) as "Department of Defense (DoD) activities conducted outside the United States and its territories to directly relieve or reduce human suffering, disease, hunger, or privation" (CJCS, 2014, p. GL-7). Military capabilities are tailored for combat operations but have also proven themselves invaluable to international humanitarian disaster relief efforts. DoD FHA operations are in support of the host nation, and USAID is the lead federal agency. The USMC also works alongside many other foreign government organizations and non-government organizations (NGOs) in a humanitarian operation. During the 2010 earthquake in Haiti, over 900 NGOs registered to respond (Tatham & Christopher, 2014). All participants in an HA/DR operation are compelled to embody four principles widely accepted by humanitarian organizations and endorsed by the United Nations (U.N.): "humanity, neutrality, impartiality, and independence" (CJCS, 2014, p. I-3). These principles each promote the idea that responding organizations must subordinate other interests to the needs of the affected population to work together without hostility or conflicts of interests. An understanding of these principles must guide all military planners as they prepare for a HA/DR operations (CJCS, 2014).

Numerous publications outline various phases of a humanitarian operation (Altay & Green, 2006; Apte, 2009; Cozzolino, 2012; Kovacs & Spens, 2007; Van Wassenhove, 2006). The phases of a humanitarian operation, as outlined by Kovacs and Spens (2009) are “preparation, immediate response, and reconstruction” (p. 11). Apte, Goncalves and Yoho (2016) outlined the key stages of humanitarian operations as preparedness, relief response, recovery, and development (p. 10). Cozzolino (2012) defined a *disaster management cycle* as comprised of four phases: mitigation, preparation, response, and reconstruction, as depicted in Figure 6.

Figure 6. Humanitarian Logistics Stream. Source: Cozzolino (2012).



The mitigation stage refers to actions, such as the creation of laws or institutions, taken by governments to decrease the social vulnerability of a population to the effects of a natural disaster. The preparation phase includes actions of governments and humanitarian organizations that enable a timely and effective response to humanitarian disasters, such as the stockpiling of supplies and organization of efforts among the various actors. The response phase consists of the collaborative immediate response actions and the restoration of basic essential goods and services to the greatest number of recipients possible. The reconstruction phase includes various actions taken in response to a disaster to prepare for

long-term recovery, such as repair and construction of road networks and logistical supply chains (Cozzolino, 2012).

The 2005 Humanitarian Response Review (HRR) and the resulting U.N. Cluster Approach (CA) is arguably the largest international attempt to increase coordination among the multitude of humanitarian actors and innovatively restructure operations (Tatham & Christopher, 2014). The 2005 HRR evaluated the response of the 2004 Asian tsunami, which identified many shortcomings of the humanitarian community in terms of predictability, efficiency, and effectiveness (Allende & Anaya, 2010). Major areas identified for improvement included accessing reliable funding, strengthening humanitarian coordination efforts, and increasing the capacity of the collective humanitarian organizations to meet the needs of large populations affected by disasters (Tatham & Christopher, 2014). The CA is meant to address the deficiencies related to capacity. The CA organizes humanitarian functions into 11 clusters and designates a lead organization to each cluster. Industry leaders agree that the cluster approach is a major change to the way that humanitarian missions are coordinated on a global scale (Tatham & Christopher, 2014). The list of clusters and the lead organizations are in Table 2.

Table 2. Humanitarian Function Clusters. Source: Cozzolino (2012).

Cluster (Sector or area of activity)	Cluster lead
Technical areas:	
1. Nutrition	UNICEF (United Nations Children's Fund)
2. Health	WHO (World Health Organization)
3. Water/sanitation	UNICEF
4. Emergency shelter	UNHCR (United Nations High Commissioner for Refugees)
Cross-cutting areas:	
5. Camp coordination/management	UNHCR/IOM (International Organization for Migrations)
6. Protection	UNHCR
7. Early recovery	UNHCR/OHCHR (Office of the High Commissioner for Human Rights)/UNICEF
Common service areas:	
8. Logistics	WFP (World Food Programme)
9. Emergency telecommunications	OCHA (Office for the Coordination of Humanitarian Affairs)/UNICEF/WFP

C. HUMANITARIAN LOGISTICS

Humanitarian operations are largely a function of logistics (Tatham & Christopher, 2014). Humanitarian organizations spend as much as 60–80% of their expenditures on logistics (Tatham & Christopher, 2014). This is not surprising when taking into account the immense complexity of managing supplies, transportation, health services, maintenance, or general engineering in the context of a displaced, desperate, and remote population with a damaged national infrastructure. The definition of *humanitarian logistics* is a "special branch of logistics which manages response supply chain of critical supplies and services with challenges such as demand surges, uncertain supplies, critical time windows in face of infrastructure vulnerabilities and vast scope and size of the operations" (Apte, 2009, p. 17).

These challenges are amplified by numerous actors in a humanitarian operation that seek to attain unity of effort in a chaotic setting (Tatham & Christopher, 2014). Donors may contribute goods to the relief efforts that ignore the needs and culture of the population (Tatham & Christopher, 2014). Examples of this include sending pork products to the Middle East or teddy bears to earthquake victims. Such unsolicited donations cause

bottlenecks in the operation because volunteers and staff must sort through poorly organized deliveries (Van Wassenhove, 2006). Speed, efficiency, and cost effectiveness can be achieved in HA/DR only by maximizing coordination among all the actors and by prioritizing actions to meet the greatest needs first (Cozzolino, 2012). This aid must be delivered all the way to the point of consumption, including last mile distribution (Cozzolino, 2012). Last mile distribution is a metaphorical term used in the logistics field referring to the last leg of a distribution route required to get a product to the end user (Apte, 2009). Last mile distribution in HA/DR is one of the greatest challenges for humanitarian logisticians (Apte, 2009). According to the principles of humanity and impartiality, relief aid should be delivered right to those with the greatest need, which are often in the hardest-to-reach places (U.N., n.d.). Last mile distribution is rarely conducted by USAID or military members without the support of the host nation or NGOs (JHOC, personal communication, September 18–19, 2017). Problems such as the last mile distribution, uncertain demand, political volatility, and chaotic operating conditions prevent humanitarian logisticians from using the same methods as the commercial sector (Van Wassenhove, 2006). Tatham and Christopher, in their 2014 work, listed some of the starkest differences between commercial and humanitarian logistics, shown in Figure 7.

Figure 7. Commercial Logistics versus Humanitarian Logistics. Source: Tatham and Christopher (2014).

ASPECT	**COMMERCIAL**	**HUMANITARIAN**
PURPOSE	Economic profit	Social impact
CONTEXT	Uninterrupted	Interrupted
PERSPECTIVE ON TIME	Time is money	Time is life (or death)
PEOPLE SERVED	Paying customers	Beneficiaries
SOURCE OF FUNDS	Paying customers	Donors
WORKFORCE	Paid staff	Volunteers; staff

D. CORE COMPETENCIES WITHIN ESSENTIAL SERVICES AND CAPABILITIES

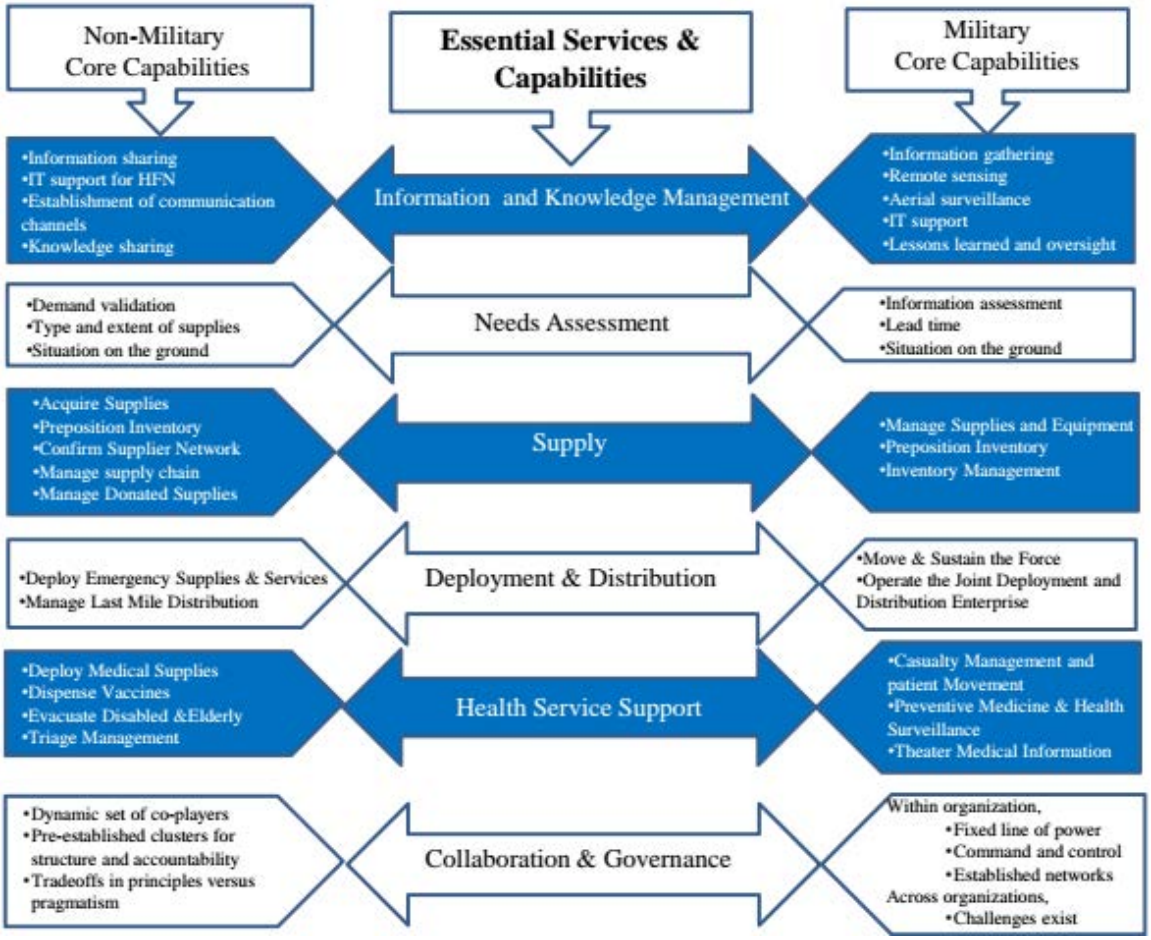
Each one of the four phases of a humanitarian operation has specific and perhaps unique capability requirements. In their 2016 work, Apte et al. surveyed logisticians from various humanitarian organizations to determine the most widely accepted core capabilities in humanitarian organizations. Respondents to the study placed approximately 80% of all humanitarian actions within one of the following six essential services and capabilities: information and knowledge management, needs assessment, supply, deployment and distribution, health services support, or collaboration and governance (see Figure 8; Apte et al., 2016). Humanitarian and military organizations have different core competencies within these six essential services and capabilities.

Figure 8. Essential Services and Capabilities for Disaster Response.
Source: Apte et al. (2016).

Prahalad and Hamel (1990) provided an overview of competencies that can be considered core to an organization. Three requirements of a core competency are to contribute to the end needs of the customer, to be difficult to replicate, and to potentially provide access in varying markets (Apte et al., 2016; Prahalad & Hamel, 1990). The

humanitarian and military organizational core competencies within these six essential capabilities are different. Apte et al. (2016) described the military and non-military core competencies, as shown in Figure 9.

Figure 9. Military and Nonmilitary Core Competencies.
Source: Apte et al. (2016).



These military core competencies were developed with personnel, equipment, and training that was not initially designed for humanitarian operations but rather with primarily combat operations in mind. This anomaly as well as multiple other factors causes variances in performance for military organizations acting to support humanitarian relief efforts. In response to the 2010 Haiti earthquake, for example, the USMC conducted rotary aircraft assessments in accordance with their aerial surveillance core competency but failed

to complete assessments in remote locations that were badly in need of relief (Gastrock & Iturriaga, 2013). This paper specifically focuses on the core competencies of information and knowledge management (I/KM) and needs assessments (NAs). We now discuss these two core competencies in detail and the other competencies briefly, in terms of their contributions to the essential services and capabilities of humanitarian operations.

1. Information and Knowledge Management

Information and knowledge management (I/KM) is a core competency of both military and nonmilitary organizations (NMOs). Although information sharing can be considered a form of collaboration and therefore a separate competency, the debate of where to place information sharing categorically should be considered less important than the important role that information sharing plays in humanitarian operations (Zhang, Zhou, & Nunamaker, 2002). Tatham and Spens (2011) described information management as a "hierarchy of increasing complexity" from data to information and then knowledge. Tatham and Spens (2011) defined this hierarchy as follows:

1. Data. A collection of related facts usually organized in a particular format such as a table or database and gathered for a particular purpose.
2. Information. Data that have been interpreted, verbalized, translated, or transformed to reveal the underlying meaning or context.
3. Knowledge. The internalization of information, data, and experience. This can be further subdivided into
    - tacit knowledge, which is the personal knowledge resident within the mind, behavior, and perceptions of individual members of the organization; and
    - explicit knowledge, which is the formal, recorded, or systematic knowledge that can easily be accessed transmitted or stored in computer files or hard copy. (p. 13)

For this paper, we are primarily concerned with data, information, and explicit knowledge.

The first critical step in I/KM is to interpret the effects of the disaster and then to translate that into an understanding of the required response. Proper implementation facilitates an organization's ability to answer broad questions initially and narrow the scope as time and information become available. The key questions should include the following: When did the disaster happen? Who did the disaster affect? What critical infrastructure and services are no longer available? Where is disaster aid demand the highest? How should

local authorities and responders coordinate support? Finally, how much relief aid is required to support the demand (Apte & Yoho, 2012, p. 8)? Analysis and assessment of information for the purposes of determining gaps are covered under the needs assessment competency.

Information gathering, sharing, and management is a constant cycle that transcends phases of both disaster response and humanitarian relief. Successful humanitarian logistics is dependent upon information management (Apte, 2009). Supply chains must be agile enough to be effective, and they "can only achieve agility through an effective information infrastructure and knowledge of requirements in the affected area" (Apte, 2009, p. 68). The three characteristics of a quality information system are "visibility, transparency, and accountability" (Apte, 2009, p. 68).

a. Information Management and the U.S. Military

The USMC, and the U.S. military more broadly, is poised to facilitate information management using many of its collection assets, known to the military as *intelligence gathering* (Apte et al., 2016). However, the use of the word *intelligence* brings forth a negative connotation in the humanitarian community because it is often associated with spying or secretly collecting information. Therefore, the word *information* should be used in its place when referring to intelligence gathering activities during the support of HA/DR operations (JHOC, personal communication, September 18–19, 2017; HART, class notes, September 26–29, 2017). The litany of intelligence gathering assets available to the USMC include intelligence, surveillance, and reconnaissance (ISR) assets, such as manned and unmanned aviation platforms, human intelligence personnel, satellite imagery, and open source data analysis. However, these are not all unique military assets, especially in a growing age of technology in which drones are becoming a common employment tool and organizations such as the National Oceanic and Atmospheric Administration (NOAA) and the Pacific Disaster Center (PDC) provide high quality open source and satellite imagery analysis.

Information sharing and management in support of HA/DR operations is best achieved by maximizing the use of unclassified domains and information (DoD, 2011;

HART, personal communication, September 26–29, 2017; JHOC, personal communication, September 18–19, 2017). The DoD currently utilizes the All Partners Access Network (APAN) site as its primary means of information sharing and management. However, there are many sites across the humanitarian community that serve much of that same purpose. Table 3 lists several of the most common sites utilized regularly by the humanitarian community regardless of USG or U.S. DoD involvement in the disaster response.

Table 3. Information Gathering and Sharing Sites Commonly Used by the Humanitarian Community

Name	Site	Owner
CFE Website	https://www.cfe-dmha.org/	Center for Excellence in Disaster Management and Humanitarian Assistance
ReliefWeb	http://reliefweb.int/	U.N. Office for the Coordination of Humanitarian Affairs (UNOCHA)
Virtual OSOCC	http://vosocc.unocha.org/	U.N. Office for the Coordination of Humanitarian Affairs (UNOCHA)
Global Disaster Alert and Coordination System (GDACS)	http://www.gdacs.org/	U.N. Office for the Coordination of Humanitarian Affairs (UNOCHA)
Humanitarian Response	http://www.humanitarianresponse.info/	U.N. Office for the Coordination of Humanitarian Affairs (UNOCHA)
OCHA 3W	http://3w.unocha.org/WhoWhatWhere/	U.N. Office for the Coordination of Humanitarian Affairs (UNOCHA)
Integrated Regional Information Networks (IRIN) News	http://www.irinnews.org/	IRIN
Foreign Assistance Dashboard	http://www.foreignassistance.gov	U.S. Government—Office of Foreign Disaster Assistance
Foreign Aid Explorer	https://explorer.usaid.gov/	U.S. Government—U.S. Agency for International Development
Pacific Disaster Center Website	http://www.pdc.org	Pacific Disaster Center
Log Cluster	http://www.logcluster.org	Logistics Cluster

Information sharing plays a critical role in the efficiency and effectiveness of disaster relief (Altay & Pal, 2014). Combatant commanders and JTF staffs often demand a great deal of information to develop a common operational picture when responding to a disaster. With many resources, including personnel and equipment, to gather and process both primary and secondary data, the U.S. military is well-positioned to share information with the humanitarian community. Altay and Pal (2014) found that trust is a key element of information sharing in the humanitarian community. It is important to point out that close association with the military often violates the commonly accepted humanitarian principle of impartiality unless that sharing is done openly, with all organizations having equal access to the same information (HART, personal communication, September 26–29, 2017; JHOC, personal communication, September 18–19, 2017). By using the numerous open source information sharing platforms available and attending meetings at the Multinational Coordination Center (MNCC), Humanitarian–Military Operations Coordination Centre (HUMOCC), and so forth, the military can play a vital role in sharing information and increasing the effectiveness and efficiency of other actors supporting disaster relief efforts.

No two disasters are identical, but all disasters have similarities in the demand for information management. The following list provides some of the most relevant information that may be shared between the humanitarian community and the military during a disaster, according to the United Nations (n.d.):

- Presence, capabilities, and assets of military forces, including the time and scale of their Full Operating Capability and the end of deployment
- Requirements of military support for humanitarian assistance
- Relief activities undertaken by the military and assessment results
- Humanitarian assessment data, strategic response plans and gaps, ongoing humanitarian activities, and coordination structures
- Status of main supply routes and key infrastructures
- Population movements or potential security threats resulting from the natural disaster. (p. 12)

b. Knowledge Management and the U.S. Military

After the collection and storage of information, the USMC faces the task of knowledge management. This is especially challenging for the military due to the high

turnover rate that is common in deployed units supporting HA/DR missions (Apte & Yoho, 2012). The use of after action reports (AARs) and the lessons learned consolidated by the Marine Corps' Center for Lessons Learned (MCCLL) and the Joint Center for Lessons Learned (JCLL) enable units and commanders to access the knowledge gained through previous operations and exercises. Furthermore, military units retain explicit knowledge (Tatham & Spens, 2011) through the development of concept of operations guides such as the U.S. PACOM Foreign Humanitarian Assistance Concept of Operations (FHA CONOPS). However, explicit knowledge does not have the same level of impact gained through first-hand, tacit knowledge. Therefore, a negative learning curve is assumed as military command staffs continue to rotate (Tatham & Spens, 2011).

U.S. PACOM represents the majority of DoD responses to natural disasters and as such, is viewed as the model for the development of explicit knowledge in the DoD for HA/DR operations. As previously discussed, U.S. PACOM (2015) published the *FHA CONOPS* and the *Foreign Humanitarian Assistance Knowledge/Information Management Guide*. The guide "is designed to improve interoperability U.S. PACOM-wide" (U.S. PACOM, 2015, p. 7). For each new disaster that U.S. PACOM responds to, a new information/knowledge management standard operating procedure (SOP) is developed specifically for that disaster. For instance, in 2013, U.S. PACOM published the Information Management/Knowledge Management SOP in support of Operation Damayan. This SOP was designed for the same purpose as the U.S. PACOM *Foreign Humanitarian Assistance Knowledge/Information Management Guide*.

2. Needs Assessment

Needs assessment (NA) is the second core capability in support of humanitarian operations. The primary purpose in this process is to define the host nation and affected population's need because this will generate the requirements for capabilities necessary to accomplish a mission (Apte et al., 2016). The NA consists of consolidating information into an operational picture and generating requirements based on all available information. For the military, it is crucial to merge information collected through human, electronic, and imagery assets to form a well-defined scope, means, and end state of response in the form

of a mission statement. However, the NA process is constantly reevaluated in the form of a decision cycle or input loop to redefine the required capabilities. Decision-making is crucial in an NA, but it must be done in a timely and accurate manner and under conditions in which uncertainty and a lack of information are prevalent (Apte, 2009).

The humanitarian community has multiple organizations with authority for developing doctrine on NA, including the U.N. Inter-Agency Standing Committee (IASC), the Assessment Capacities Project (ACAPS), the World Bank, and the Sphere Project. These organizations have different but complementary definitions, models, steps, and phases for conducting needs assessments, also referred to as "coordinated needs assessments" (ACAPS, 2014; IASC, 2012) or "common needs assessments" (Garfield, Blake, Chatainger, & Walton-Ellery, 2011, p. 1). ACAPS (2014) defined *needs assessments* as "how organizations identify and measure the humanitarian needs of a disaster-affected community" (p. 1). The Sphere Project, informed by ACAPS, presented a more detailed definition, which states that assessments identify "the priority needs of the disaster-affected population through a systematic assessment of the context, risks to life with dignity and the capacity of the affected people and relevant authorities to respond" (Currion, 2014, p. 8). The IASC definition combined this focus on actions and purpose with a simple definition of "the set of activities necessary to understand a given situation" (IASC, 2012, p. 6), and continued to specify a few of these activities, such as collection and analysis of data on the population, infrastructure, and economy (IASC, 2012). Each of these sources agree that assessments should inform and set humanitarian operational priorities with the current needs of the affected population.

The purpose of NAs is, most importantly, to create a common operational understanding of host nation needs and priorities for the humanitarian community to act upon (IASC, 2012). It must be understood that NAs are not only for the organization conducting the NA but also for other humanitarian actors in the area of operation (IASC, 2012). A common theme throughout NA literature is the importance of conducting assessments jointly. Coordinated assessments among multiple agencies have many advantages over a single agency's assessment, such as efficiency, timeliness, coherence, effectiveness, coordination across agencies, and better information sharing (Garfield et al.,

2011). By sharing this information, all actors will be better able to cover all affected areas by combining capacity and using resources more efficiently. Sharing information collected in an NA helps prevent the duplication of efforts and creates a baseline understanding for all actors to use during planning without overassessing the population and creating distrust among the affected people (IASC, 2012). An assessment should obtain the following key pieces of information (Garfield et al., 2011):

- Scale and severity of destruction
- Areas and people groups with the greatest need
- Trends in the current situation that could continue to affect conditions
- Gaps in the recovery efforts and areas where recovery capacity is insufficient
- Coping strategies used by the affected population (p. 4)

An assessment is used to collect both primary and secondary data. Primary data is collected through first-hand information. Examples of primary data collection methods include conducting site visits, collecting aerial reconnaissance, speaking with the affected population, or conducting community group discussions (ACAPS, 2014). Within the first 72 hours, almost all primary information comes from the host nation. Secondary data is pre-existing and available to organizations via online or remote collection methods. Examples of secondary data include websites, situation reports, country data books, lessons learned reports, information sharing modems such as APAN or ReliefWeb, the media, imagery, and other responding agencies (ACAPS, 2014; IASC, 2012). Secondary information helps organizations build their awareness of the situation and formulate their response plan based on the host nation's needs and existing capacity.

a. Phases of an NA

ACAPS (2014) outlined the following six steps to a successful or "good enough" NA, as illustrated in Figure 10:

1. Preparing for an assessment

2. Designing the assessment

3. Implementing the assessment

4. Analyzing the data

5. Sharing your findings

6. Decision making

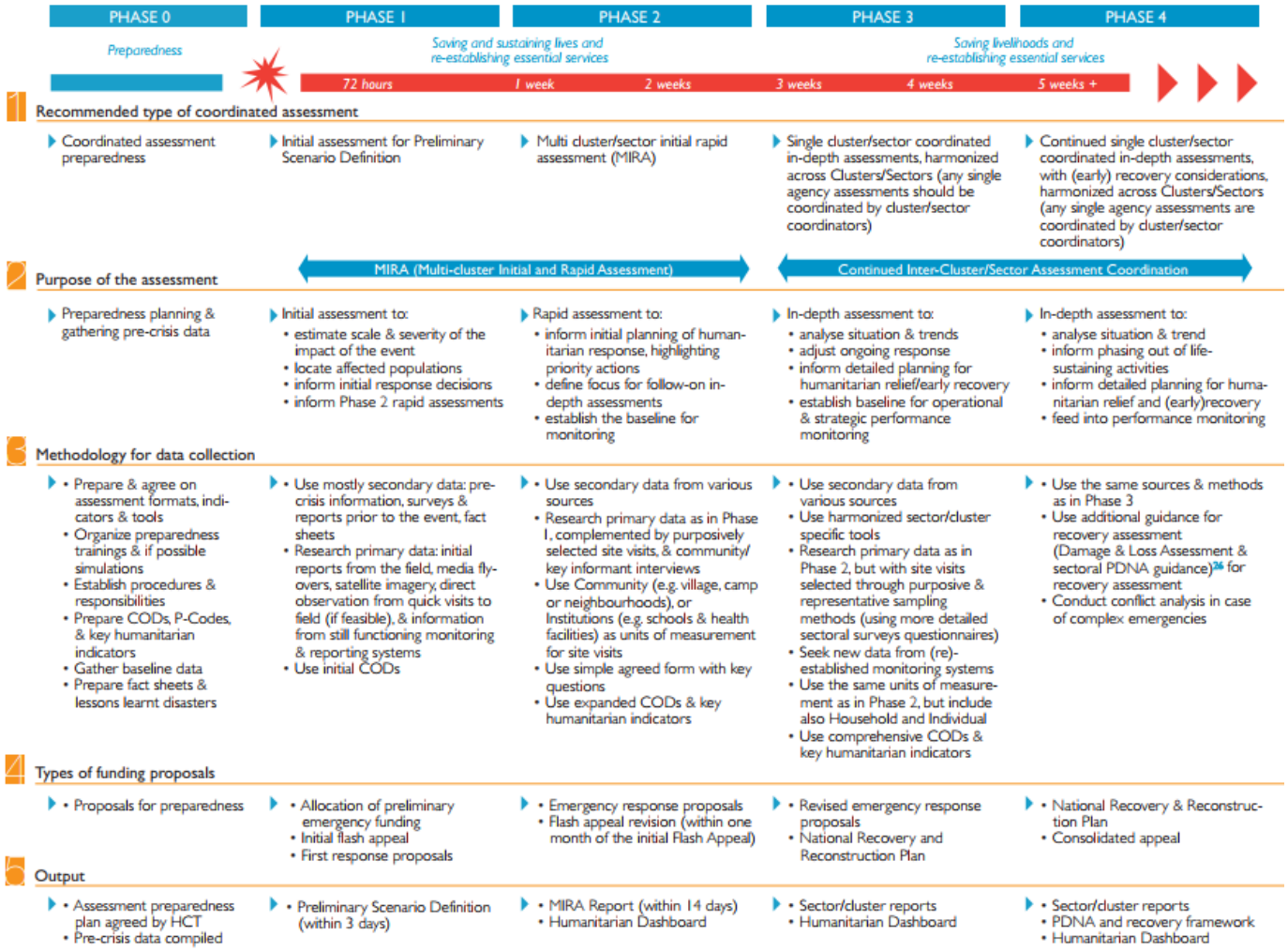
Figure 10. Phases of Needs Assessment. Source: ACAPS (2014).

This model is circular to illustrate that assessments must be continually conducted throughout an operation to maintain accurate current needs of the population and the capacity of the host nation (ACAPS, 2014). This continuous action also allows for an assessment to occur quickly after a disaster strikes with only enough information to make the most time-sensitive decisions. After the initial response has been sufficiently informed, information can be gathered in greater detail over a longer assessment and presented in a more thorough report. The goal of the initial assessments is to gather timely, relevant, and usable information for the humanitarian community to make informed decisions as soon as

possible (ACAPS, 2014). Each assessment builds upon the data that already exists from previous analysis (IASC, 2012).

The IASC has developed a framework that includes several different types of assessments and their purposes. These include initial, rapid, and in-depth assessments (IASC, 2012). A key understanding with this framework is that each assessment will go through the phases described by ACAPS in Figure 10, but the assessment's design and implementation will look different depending on the phase of the operation in which it is being conducted. Table 4 outlines this framework.

Table 4. Framework for Assessments. Source: IASC (2012).



b. Multi-sector Initial Rapid Assessment

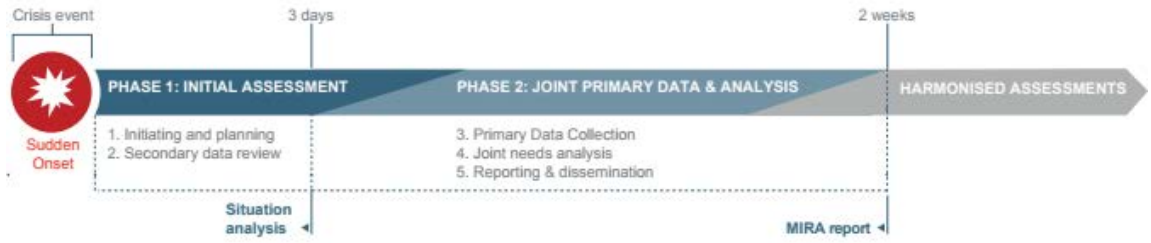
Multi-sector initial rapid assessments (MIRAs) are an inter-agency effort designed to provide the humanitarian community a common operational picture of each cluster in order to develop a joint plan in response to sudden onset disasters (IASC, 2015). The MIRA framework provides guidance for the collection, analysis, dissemination, and reporting of NA information. However, the MIRA process does not provide statistically significant data or information for the planning of relief efforts to extremely specific locations. After the onset of a disaster, the MIRA must be one of the first humanitarian actions to take place. MIRA begins with the initial assessment.

Initial assessments are intended to reach completion within 72 hours of the disaster occurrence. Most organizations are limited to the collection of secondary data during this time before they have any physical presence in the host nation. Primary data in the first 72 hours is mainly collected by the host nation, which is directly observing the disaster's effects and can conduct remote sensing to determine the population's immediate needs. The initial assessment is meant to determine the scale and severity of the disaster and identify the critical needs of the population with emphasis on the most vulnerable groups (IASC, 2012).

Even though the initial assessment is released 72 hours after a disaster, the ultimate MIRA report is designed to take two weeks to complete. The second phase of the MIRA implements a greater focus on primary data collection, joint efforts, and more detailed reporting. Primary data collection tools must be selected based on the priority information requirements (PIRs) of the operation. Primary data collection, as described by the IASC's MIRA guidance should be "a mix of direct observation, key informant interviews, and community group discussions" (IASC, 2015, p. 14). The MIRA guidance recommends the use of experienced and trained personnel onboard field assessment teams tasked with primary data collection. The actual makeup of this field assessment team varies based on the disaster but must include an assessment coordinator who can ensure that the team's efforts do not overlap assessments being conducted elsewhere or that are already completed for that area and/or cluster (IASC, 2015).

The purpose of the joint needs analysis is to compile the secondary and primary information that has been gathered and to translate the information into recognizable trends and actionable items. This step takes into consideration all the relevant observations, combines data to identify patterns and trends, and compares the information gathered on various social groups. Finally, MIRA culminates with the release of its report approximately two weeks into the disaster response. This report is tailored to various audiences with different formats and amounts of detail. The IASC MIRA guidance can provide more details on the MIRA process, illustrated in Figure 11, with further instructions, best practices, recommendations, and lessons learned.

Figure 11. The MIRA Process. Source: IASC (2015).



c. In-depth Assessments

Demand for more detailed information and NA starts two weeks after a disaster strikes, if not sooner. In-depth assessments should be completed within the first 30 days of a disaster. In-depth assessments are mainly conducted in a joint fashion, orchestrated by the U.N. lead organization for each cluster. In-depth assessments inform the current humanitarian response effort with up-to-date trends and feedback on relief effectiveness. These assessments should include common informational metrics or “key indicators” in order to be compared across the various sectors. Key indicators can help inform the humanitarian community of the operation’s effectiveness. In-depth assessments should have a greater emphasis on primary data collection and quality of information. The information from in-depth assessments must be conglomerated on a shared database and updated as ongoing assessments take place (IASC, 2012).

d. Post-disaster Needs Assessment

The Post Disaster Needs Assessment (PDNA) is conducted after the humanitarian relief operation has finished in the response phase and the threat of natural hazards has subsided. From this point, the PDNA takes approximately four weeks to complete. It is important that this assessment is still led by the host nation government, although other organizations such as the World Bank and U.N. OCHA may support the effort. This assessment focuses on gathering post-disaster damage assessments from all sectors with a division of focus on Damage and Loss Assessments (DALAs) and Human Recovery Needs Assessments (HRNAs) in each sector. DALA estimates damages to physical infrastructure, material goods, economic impact, trade flows, and so forth. HRNA estimates the disaster's effects on social factors and human patterns of life. The HRNA may be broken down into units of individuals, households, or communities. A PDNA produces a recovery framework that presents the DALA and HRNA findings with short, medium, and long-term recommendations from each sector (Jones, 2010).

e. Indicators

These assessments should include common informational metrics or "key indicators" in order to be compared across the various sectors. Key indicators can help inform the humanitarian community of the operation's effectiveness. Indicators can be thought of as variables that show a characteristic of the affected population or host nation that describe an aspect of the humanitarian mission. Indicators are designed for prolonged monitoring of the situation and should be linked back to early assessments or baseline data to measure the effectiveness of the relief effort. Good indicators can be consistently measured in a reliable manner, can accurately measure the condition intended, are specific, are sensitive to changes in the situation, can be feasibly collected, are intuitive, and are comparable across time. If indicators are unstable or inconsistent in each assessment, they could lead to misinformed decisions and possibly a failure of the humanitarian community to address a population's needs (Garfield et al., 2011, pp. 6, 9–12).

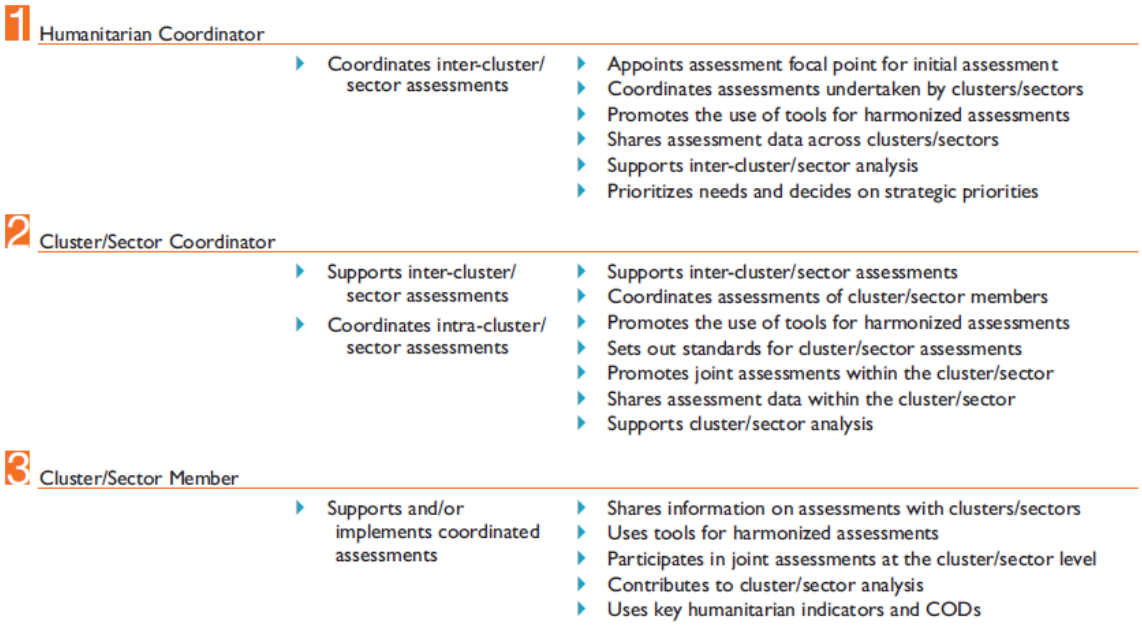
f. Actors in a NA

The most important actor in the conduct and management of NA is the host nation. Ideally, NA is led by the host nation government unless that entity is unable to do so. The host nation is best equipped to understand the needs of its people and must be given the opportunity to lead the NA effort (IASC, 2012).

The Inter-Cluster Coordination Mechanism (ICCM) is arguably second in importance to the host nation. This ICCM is typically the coordinating body for assessment, although the ICCM may also decide to establish an Assessment and Information Management (AIM) working group (IASC, 2012). This organization, staffed by IASC personnel and cluster coordinators, is chaired by OCHA. The AIM working group may be established on a short- or long-term basis. The MIRA is normally designed, planned, and managed by the AIM working group. Furthermore, it helps coordinate and support assessment efforts across the different clusters throughout the relief effort. The AIM working group helps harmonize all assessments through the use of common operational datasets (CODs) and sharing results from needs assessments (IASC, 2012).

The U.N. framework for an ICCM includes a humanitarian coordinator, cluster lead agency, and individual organizations (IASC, 2012). The humanitarian coordinator is responsible for the coordination of assessments throughout all the clusters. This person is supported by U.N. OCHA. The cluster lead agencies are responsible for conducting the assessments within their sectors. These lead agencies coordinate individual organizations' assessments within the clusters to avoid, or at least reduce, duplication of efforts. These individual organizations include NGOs and the International Federation of the Red Cross/Red Crescent, and possibly foreign government agencies such as USAID or the DoD. Figure 12 illustrates the roles and responsibilities that each actor has in NA within the U.N. ICCM framework.

Figure 12. Roles and Responsibilities of ICCM Actors. Source: IASC (2012).



g. Principles of a NA

Many of these foundational sources present a list of best practices and recommendations for the conduct of NA. For brevity, we have chosen to present the ACAPS 10 basic principles of an NA, as outlined in the ACAPS (2014) *Humanitarian Needs Assessment: The Good Enough Guide*, and elaborate on these 10 principles with inputs from other sources. The following are the ACAPS 10 basic principles:

1. "Make the scope of the assessment reflect the size and nature of the crisis" (ACAPS, 2014, p. 3). An NA must cover all affected areas and sectors, but no more than what was affected by the actual disaster. Actors must understand that the population likely had needs before the disaster and providing aid beyond the scope of the disaster can become very time-intensive and even undermine the population's traditional coping mechanisms (ACAPS, 2014).

2. "Produce timely and relevant analysis" (ACAPS, 2014, p. 3). Assessments immediately after a disaster must be linked to specific decisions that must be made in order to respond. Different organizations have different

information interests; therefore, it is best to collect and interpret data jointly rather than independently (IASC, 2012). A balance of quality, detail, and timeliness must be achieved in NA in order to be useful. Initial assessments should focus on quickly gaining information that is easily interpreted and applied rather than statistically significant (IASC, 2012).

3. “Collect usable data” (ACAPS, 2014, p. 4). Information management personnel should help the assessment team collect information that can be linked to performance metrics. Information management personnel can also review the collection methods and ensure that data collected can be reliably compared to other assessments (IASC, 2012). Common Operational Datasets (CODs) help the various actors aggregate information. CODs are provided by OCHA and cover essential data including “humanitarian profile, population statistics, administrative boundaries, populated places, transportation network, hydrology and hypsography” (IASC, 2012, p. 7).

4. “Use valid and transparent methods” (ACAPS, 2014, p. 6). Using standardized methods for data collection, such as those endorsed by the U.N., is best. Ensure that your collection methods and sources are annotated in any reports disseminated (ACAPS, 2014).

5. “Be accountable” (ACAPS, 2014, p. 6). The affected population should be included in planning and aid implementation. These groups have the highest vested interest in the success of the operation and should be allowed a voice in the actions that affect their community. Actors in an NA are also accountable to each other. Actors should ensure that their results are cleared by the lead assessment team prior to dissemination. Likewise, a communication strategy must be established among the assessment team that allows for incremental communication to decision-makers as information becomes available (IASC, 2012).

6. “Coordinate with others and share findings” (ACAPS, 2014, p. 6). Ensure that all other actors know that an assessment is being conducted and ideally, design and plan the assessment jointly as part of a coordinated needs assessment (IASC, 2012).

7. “Make sure you can get enough resources” (ACAPS, 2014, p. 8). An effective assessment may take considerable logistics support and communications assets. Additionally, the assessment team must be tailored to the given situation with members trained in multi-sectoral assessments, the host nation culture, security, data collection methods, planning, ethics, humanitarian principles, and so on. (Garfield et al., 2011).

8. “Assess local capacities” (ACAPS, 2014, p. 8). NA teams must work to consider and measure the response of the host nation and humanitarian community to identify gaps in the response. Local capacities include all coping mechanisms that the host nation population is using to deal with the disaster’s affects. Vulnerable groups should be particularly engaged, including elderly, adolescent, sick, and diverse populations to ensure their needs are well understood. Ensure that assessment teams include a balance of both genders to communicate with all vulnerable groups (IASC, 2012).

9. “Manage community expectations” (ACAPS, 2014, p. 9). NA teams must be careful not to promise results or aid to a population before proper planning has taken place. This expectation management extends to all stakeholders, such as the host nation government and other actors in the operation. Multiple visits to a location for assessments without aid results may cause impatience and distrust within the affected population. In all visits, assessment teams must be very sensitive to cultural norms (ACAPS, 2014).

10. “Remember that assessment is not just a one-off event” (ACAPS, 2014, p. 9). Assessments must be continually conducted throughout the course of

an operation. The current situation is constantly changing, especially in large multi-national response efforts. Assessments increase in detail as the most pressing needs are met and more time is allowed for thorough assessments (ACAPS, 2014).

3. Other Capabilities

Though our research focuses on I/KM and NA, it is useful to gain an understanding of the remaining four essential capabilities. Supply includes the "process of providing materials and items used to equip, support, and maintain an organization" (USMC, 2000, p. 5-1). Activities related to supply include procurement, staging, inventory management, and warehousing (Apte et al., 2016). Both humanitarian and military organizations actively preposition assets and supplies strategically for HA/DR operations. One of the unique supply challenges for humanitarian organizations during an operation is to manage an overwhelming amount of donated supplies that are rarely standardized or tailored to the unique needs of the affected population.

Deployment and distribution of assets is frequently a capability that the DoD is requested to provide. The DoD's equipment—such as off-road heavy-lift vehicles, heavy-lift helicopters, sealift, recovery assets, and inter-theater strategic airlift—are well suited for operating in areas with degraded infrastructure and for distributing supplies to remote locations. Humanitarian organizations typically rely on commercial contracts to move personnel and supplies when the DoD is not in support (Apte et al., 2016). Last mile distribution of supplies poses a challenge for HA/DR planners. Placing relief supplies into the hands of the affected population requires a robust capability and detailed management of supply routes that the military is uniquely suited to support.

Health service support is a critical and immediate need for the affected population of a natural disaster. It is imperative that the humanitarian response can provide medical aid in a timely manner. Any military commander has the authority to employ his unit when lives are in immediate danger and the unit is able to intervene (Wilhelm, 2015). The OFDA mandate includes the activities of "saving lives, alleviating human suffering, and reducing the social and economic impact of disasters worldwide," of which health services are

critical (USAID, 2017a). Hospital ships, field hospitals, and surgical units are all medical capabilities of the DoD historically used to support HA/DR operation (Apte et al., 2016). NGOs, on the other hand, have historically provided general medical supplies and vaccinations in accordance with their organizations' competencies (Apte et al., 2016).

Collaboration and governance have proven very difficult in HA/DR operations. Collaboration among military, government, civilian, host nation, international agencies, and U.N. authorities can obviously become complex and confusing. The international community relief effort for the 2010 Haitian earthquake disaster included over 400 separate organizations (Allende & Anaya, 2010). Despite the common cause of providing aid, each one of these organizations has private interests, which are frequently given priority over the collective achievement (Allende & Anaya, 2010). Governance of these entities can originate from either the host nation or international authorities such as the U.N. OCHA. Consolidation of coordination centers has rarely been achieved well; in the 2015 Nepal earthquake disaster relief operation, there were five coordination centers in Kathmandu alone (Bollettino & Kreutzer, 2015). Unification of these governance efforts prevents duplication of labor and waste throughout the operation (Allende & Anaya, 2010).

E. ACTORS

There are numerous actors in an HA/DR operation. These actors often have little to no command and control over each other but frequently work in a collaborative environment. Actors generally share the common goal of restoring basic necessities back to the people and communities in which they are supporting. Common actors include inter-governmental organizations, government aid agencies, the military, non-military organizations, host nation, media, and donors.

1. Inter-governmental Organizations

The U.N. is the primary and most influential of inter-governmental organizations operating in humanitarian operations. The U.N. OCHA is normally the lead entity in charge of coordination among the multitude of actors in the disaster's theater (Allende & Anaya, 2010). The U.N. utilizes the cluster approach, discussed earlier, to organize and channel

humanitarian efforts to decrease waste and maximize the international community's capacity for aid (Tatham & Christopher, 2014).

2. Government Aid Agencies

USG agencies, principally USAID, lead the world in foreign humanitarian assistance. Government agencies like USAID have the advantage over their NGO counterparts of consistent and reliable funding. In 2005, OFDA's budget was approximately $603.2 million, which is less than 5% of the total funding given to USAID. One of the most immediate and effective sources of support to nations affected by disaster by government agencies is emergency funding (Tatham & Christopher, 2014). These agencies are also instrumental in the coordination and communication among other entities from their nation.

3. Military

The military plays a significant role in providing support in response to a disaster. The two major contributors to the military's successful role are the ever-present command and control structure and the fact that a "military mission normally dictates accomplishment despite the cost" (Apte, 2009, pp. 20–21). First, the military mission, combat or noncombat, always requires command and control. This competency is required at all levels of military operations and is nondiscriminatory to service components (Apte, 2009). Secondly, the military mission is deemed the priority, and accomplishing the mission can only be achieved when funding is made available. Once a mission is assigned to a military unit, the funding of the mission is immediately allocated and reevaluated as necessary to accomplish the mission (Apte, 2009).

Referring back to the previous definition, foreign humanitarian assistance (FHA) consists of "DoD activities, normally in support of USAID or Department of State (DoS), conducted outside the United States, its territories, and possessions to relieve or reduce human suffering, disease, hunger, or privation" (CJCS, 2014, p. GL-7). The USMC accomplishes its role in supporting humanitarian operations primarily through the employment of the MEU and/or a combination of other MAGTF elements. Through the MEU, the USMC has a litany of hard assets consisting of equipment and personnel, and

soft assets consisting of capabilities used to support humanitarian operations (Gastrock & Iturriaga, 2013). Gastrock and Iturriaga (2013) detail the organization of the USMC in response to HA/DR operations as well as the litany of available assets.

The USMC approaches HA/DR operations in a similar fashion to other operations within the range of military operations, using the tenets of the Marine Corps Planning Process (MCPP). The first step of the MCPP is problem framing. Problem framing is the most applicable step of MCPP to I/KM and NA competencies. The problem framing step defines the problem and mission through understanding and analysis of the environment, intelligence, capabilities, problem, purpose, and the commander's initial intent and guidance (USMC, 2016). The USMC collaborates with the host nation (HN), nonmilitary organizations (NMOs), and other agencies in the Civil-Military Operations Center (CMOC) under the supervision of the Civil Military Operations officer (USMC, 2016). The scope of this research narrows the focus of the USMC hard and soft assets specifically to those of conducting I/KM and NA competencies.

4. Nonmilitary Organizations

In our research, we consolidate commercial and non-governmental organization (NGOs) into the single category of nonmilitary organizations (NMOs). NMO supply chains struggle to meet the demand during a disaster due to their inability to radically change their distribution networks (Apte, 2009). For instance, a commercial enterprise infrequently adjusts a distribution network and generally only does so to meet demand. This is a decision that takes time to both analyze and implement. In a disaster, time is crucial to providing an immediate and correct response. The flexibility and preparedness to adjust a distribution network is critical.

5. Host Nation

The host nation (HN) is the nation that is receiving support or assistance from partnered nations or other supporting organizations. All the efforts of the international community should be, but are not always, based on the needs of the HN and its specific requests for aid (Allende & Anaya 2010). The HN generally conducts an initial assessment of the outstanding needs and requirements, and requests international assistance (CJCS,

2014). The HN is responsible for the coordination of all relief operations within its territories. FHA is only conducted under the supervision and permission of the HN (CJCS, 2014). Foreign aid agencies can only operate within the theater of the disaster after the HN has declared a state of emergency and requested international assistance (Cozzolino, 2012, p. 12).

6. Media

Due to the highly visible nature of sudden onset disasters, the international media community plays an active role. The coverage provided by the media can affect operations by providing a positive or negative view of the actors involved. Some organizations may actively seek out media coverage to garner support. Government and military entities have political interests at stake in the conduct of an HA/DR mission and as a result may alter their activities or communications efforts to gain media coverage (Allende & Anaya, 2010; HART, personal communication, September 26–29, 2017).

7. Donors

Donors are both suppliers to the humanitarian field and customers. Donors are customers because they are essentially paying for a service to be performed in exchange for their support (Apte, 2009). Donors are essential to humanitarian organizations but are also notoriously unpredictable. Donations of goods in response to a disaster are frequently unsuitable for the needs or culture of the affected population. Large quantities of non-standardized goods (e.g., used clothing) or culturally inappropriate goods (e.g., pork products in a Middle Eastern country) add great complexity to the organization of relief efforts (HART, personal communication, September 26–29, 2017).

F. READINESS METRICS

A review of the literature reveals a vast amount of research on business performance metrics but little on the development of military readiness metrics. However, the term *performance metrics* used in business and the term *readiness metric*s in the military share a close definition. Performance metrics are designed to assess the ability to accomplish a task after the task is completed, whereas readiness metrics are designed to

assess the ability to accomplish a future task. For this research, the terms are so closely related that the principles of developing performance metrics for business are synonymous to the principles of developing readiness metrics for the military. Lord Kelvin, a famous mathematician, emphasized the importance of measuring progress when he said:

> When you can measure what you are speaking about, and express it in numbers, you know something about it; but when you cannot measure it … your knowledge is of a meager and unsatisfactory kind. (As cited in Adams, Sarkis, & Liles, 1995, p. 24)

Current literature finds that "the primary goal when developing a performance measurement system should be to ensure that the behavior induced by the system is supportive of strategy" (Adams et al., 1995, p. 24). Furthermore, according to Adams et al., (1995) "The ability of the performance measurement system to clearly communicate strategy throughout the organization is a critical factor in determining the business's success" (p. 25). A wealth of literature points out that the development of performance metrics should be based on the primary activities and process of the organization, should be dynamic in response to future change, and should be developed in a team approach (as cited in Adams et al., 1995).

In Apte's 2017 work, she explains that many humanitarian organizations also lack solid readiness metrics. It is no surprise, then, that the DoD has also been slow to develop concrete metrics. The DoD's efforts to execute stability operations in accordance with DoD Instruction (DODI) 3000.05 will be stifled until a comprehensive framework for readiness metrics is developed (Apte, 2017). Apte (2017) describes five inputs to readiness metrics that can be developed into a readiness assessment model:

- Performance indicators
- Core competencies and capabilities
- Issues and challenges in humanitarian operations
- Lessons learned from past disasters

- Communication, coordination, and collaboration among civil-military organizations

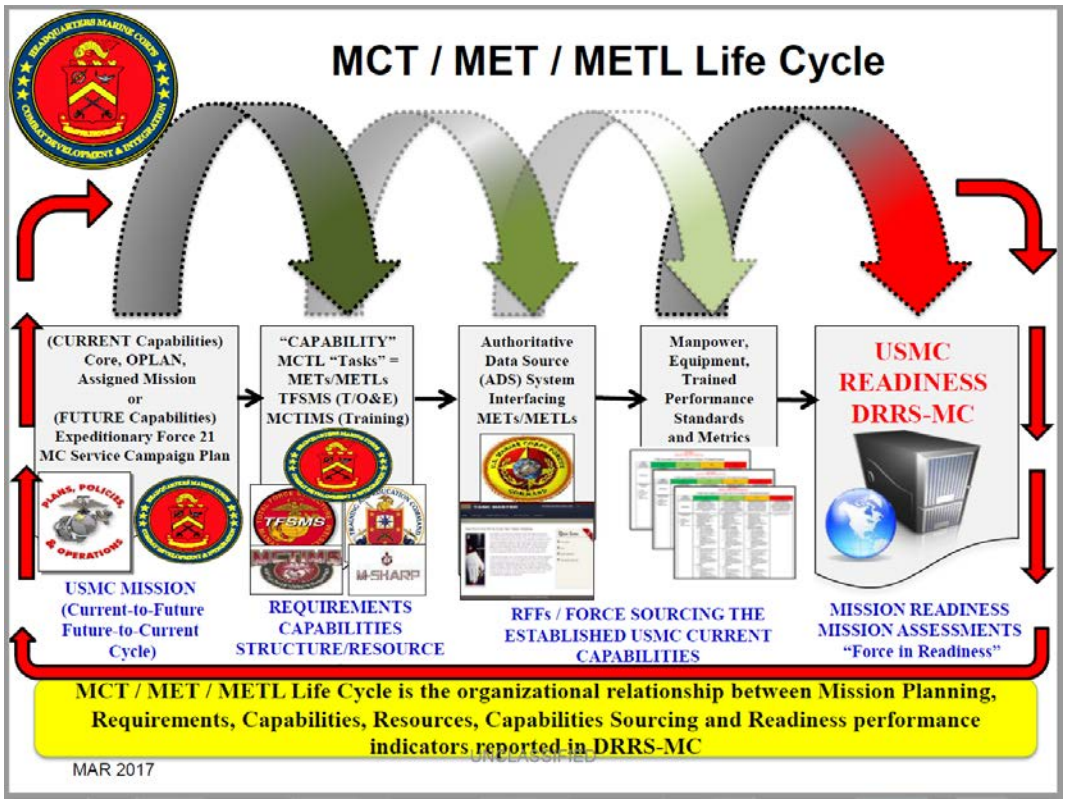
An analysis of these inputs can help develop readiness metrics in the form of mission essential tasks (METs), equipment assessments, acceptable cost parameters for defined capabilities, training and experience, and lessons learned (Apte, 2017). This readiness assessment model, if informed with sufficient inputs and metrics, should provide HA/DR planners with a firm understanding of what is needed, what must be done, and how to improve performance for future operations (Apte, 2017).

Figure 13 depicts a snapshot of the USMC process for developing and reporting readiness. In broad terms, the USMC uses its designated mission to determine its requirements, capabilities, structure, and resources. This translates into the Marine Corps tasks (MCTs), which are listed in the Marine Corps Task List (MCTL) in Marine Corps Order (MCO) 3500.26a, Universal Naval Task List (USMC, 2007). Headquarters Marine Corps (HQMC) generates METs for all organizations, installations, and Marine Corps Forces (MARFOR) organizational commands. Commanders are then responsible for the development of their own Mission Essential Task List (METL), which is approved by the higher command (USMC, 1996). Unit commanders use the METLs as a foundation for evaluating the unit's readiness and developing training plans. Commanders then report their unit readiness using the Defense Readiness Reporting System–Marine Corps (DRRS-MC) based on established standards and measures. The DRRS-MC serves as the feedback loop for reporting readiness to HQMC for meeting METs (USMC, 2011).

We research strategic-level capabilities required of I/KM and NA core competencies to support humanitarian missions to facilitate analysis by USMC commanders of their ability to achieve readiness within the two core competencies. Although we do not plan to discuss the capabilities required by specific units or MAGTF elements, we believe that our research will guide USMC commanders in the selection of their METLs and ultimately improve the USMC ability to support HA/DR operations. Therefore, we believe our research may be used as a guide for the development and

assessment of current METLs to ensure that the USMC is training as efficiently and effectively as possible to support HA/DR missions well into the future.

Figure 13. MCT/MET/METL Life Cycle. Source: USMC (2017).



G. EDUCATIONAL OPPORTUNITIES AVAILABLE TO DOD MEMBERS

1. Joint Humanitarian Operations Course

The U.S. Agency for International Development (USAID) is designated as the lead U.S. agency for coordination and support of foreign disaster assistance. USAID designates the Office of Foreign Disaster Assistance (OFDA) as the responsible office to carry out this mission. OFDA conducts the Joint Humanitarian Operations Course (JHOC) on a regular basis to educate military members on the civil-military roles in international disaster response. The course is generally a two-day course with distinct key messages:

> USAID/OFDA is the designated USG lead for foreign disaster response; when requested, DoD works in a supporting capacity to civilian relief agencies.
>
> The USG has a formal, comprehensive system for responding to international disasters; DoD is not an instrument of first resort in responding to humanitarian crises.
>
> There is a process and key tools for requesting and validating U.S. military support during disasters (ExecSec Memo, MITAM, 72-hour rule).
>
> If DoD support is requested, it must be due to a unique capability that they can provide (at an appropriate level).
>
> The United States is just one part of an organized, professional humanitarian system/architecture.
>
> The international humanitarian community responds to validated humanitarian needs on a pull not push system.
>
> Humanitarian principles and space are paramount to a successful response. (USAID, 2016, p. 6)

The objective of the course is to educate DoD service members on HA/DR operations and the role of the DoD in providing disaster relief as well as interagency coordination and support.

2. Humanitarian Assistance Response Training Course

The Center for Excellence in Disaster Management and Humanitarian Assistance (CFE-DMHA) is funded by the DoD under U.S. PACOM. The CFE-DMHA conducts the Humanitarian Assistance Response Training (HART) course. According to the CFE-DMHA (n.d.) website,

> The HART course prepares United States military commanders and their staffs to respond more effectively during civilian-led humanitarian assistance and foreign disaster response missions. The four-day, operational-level course focuses on applying the military planning and decision-making process to the unique circumstances associated with a foreign humanitarian assistance operation. Participants will employ realistic scenarios and existing plans to develop a concept of operations for a joint task force response to a major disaster. Case studies, small group practical applications, and role-playing exercises enhance lectures by civilian and military experts.

The HART course is not considered mandatory training according to any known DoD policies nor does it provide any sort of certification toward future or current military occupational specialties or positions.

III. ANALYSES

The analysis consists of a case study analysis of each of the previously mentioned disasters followed by an analysis of interviews conducted with the Office of the Secretary of Defense for policy (OSD-P) and members of the Military Liaison Team at OFDA.

A. CASE STUDIES

In order to recommend a set of readiness metrics, each of the previously discussed disasters is analyzed independently. Both positive and negative characteristics of the DoD response are discussed. The negative characteristics are further analyzed to understand what the DoD can do better in support of future HA/DR missions.

1. Haiti Earthquake 2010: Operation Unified Response

Operation Unified Response represents one of the largest disasters to date in terms of number of deaths, displaced people, and economic damage. It also represents one of the longest responses in which the DoD provided disaster relief (DiOrio, 2010). These two facts combined make Haiti a unique case. However, the magnitude of the disaster and the length of the DoD response also provide many invaluable lessons from which to learn.

a. Immediate Response

The 2010 earthquake in Haiti resulted in damage and loss of life on a level incomparable to many of the disasters to date. U.S. SOUTHCOM had an established standard operating procedure (SOP) for disaster relief but failed to adhere to the SOP due to the "cataclysmic disaster" (Guha-Sapir, Kirsch, Dooling, Sirois, & DerSarkissian, 2011, p. 125) requiring a more "robust" response. The response requirement was further elevated due to security concerns and "an anticipated but yet-undefined (by USAID) requirement to support humanitarian assistance operations" (Guha-Sapir et al., 2011, p. 125). The decision to increase the response capability beyond the SOP resulted in the presence of a military force that was larger than required (Guha-Sapir et al., 2011).

Natural disasters all have similarities in relief demand, although no two disasters are the same. Therefore, the ability of the DoD and/or combatant commands to develop a structured SOP for disaster relief is challenging, but not impossible. This challenge is further complicated when a "cataclysmic disaster" (Guha-Sapir et al., 2011, p. 125) or mega disaster, such as the Haiti earthquake, occurs. A mega disaster disrupts an otherwise structured approach to a response. One major limitation in Haiti was that the SOP did not have the "agility, flexibility, and expediency" (Guha-Sapir et al., 2011, p. 125) built in to meet the demands required of a disaster of that magnitude. The problem was further complicated by the lack of early assessments in the face of immediate response.

b. Early Assessments

Due to his presence in the country and his subsequent assignment as the joint task force (JTF) commander, Lieutenant General Keen issued verbal orders of the commanding officer (VOCO) for U.S. SOUTHCOM support in the disaster relief process. The VOCO process ensured the rapid deployment of personnel and capabilities. However, this prevented situational awareness of many of the units and commanders responding to the VOCO compared to an otherwise formal assessment process. Additionally, VOCO resulted in many inefficiencies in that some relief supplies and assets far exceeded demand while others fell short (Cecchine et al., 2013).

The DoD's formal assessment process, utilizing a Humanitarian Assistance Survey Team (HAST), was not utilized in Operation Unified Response due to the magnitude of the disaster. Lieutenant General Keen, using his years of experience and in anticipation of future mission requirements, made a judgment call when requesting units for deployment to the area. His theory was to surge assets to Haiti for immediate relief, which resulted in effectiveness but not necessarily efficiency. The surge included units such as a team from the U.S. Air Force, Special Operations Wing, to re-establish flight operations by assuming control of the Air Traffic Control functions at the Port-au-Prince Airport. The team arrived just 26 hours after the earthquake and reinstated flight operations within 28 minutes after arrival (Cecchine et al., 2013). However, early judgment calls resulted in little to no measures of true effectiveness and a lack of efficiency (Cecchine et al., 2013).

The early response of the DoD included 1,000 pallets of bottled water, against the objections of certain experts (Guha-Sapir et al., 2011). With a lack of assessments prior to the response, many USG agencies, including the DoD, "pushed resources into Haiti in order to meet the unidentified needs in the field" (Guha-Sapir et al., 2011, p. 80). Additionally, many of the response efforts created the potential for unnecessary dependency. This example is evident in Haiti where pre-earthquake water production at the Port-au-Prince municipal water authority was approximately 80 to 90 million liters per day, and a month into the response the water production rose to approximately 120 to 150 million liters per day (Guha-Sapir et al., 2011). The increased production was specifically attributed to the increased access to fuel provided by the relief efforts (Guha-Sapir et al., 2011). The objective of humanitarian assistance is to return the affected state back to pre-disaster conditions (JHOC, personal communication, September 18–19, 2017). Early assessments should have identified the pre-disaster conditions and established the post-disaster threshold for relief support to avoid the potential dependency created by the increased water production. Therefore, early assessments are crucial to preventing unnecessary dependency, measuring effectiveness, and improving efficiency.

c. Information Collection

The Haiti earthquake presented a unique situation in which the USG response was unprecedented in comparison to previous disasters. The whole of government approach resulted in the involvement of many agencies and political leaders in the support of international disaster relief operations for the first time or with little previous experience. An increase in political involvement and interagency participation created information needs that at times "detracted from the on-ground response because of the need to constantly answer questions and chase down facts" (Guha-Sapir et al., 2011, p. 78).

The U.S. Coast Guard was one of the first responders to conduct early assessments. They conducted rapid needs assessments of the structural damage to the Port-au-Prince airport and sea port through aerial surveys (Guha-Sapir et al., 2011). The assessments were completed within the first 48 hours after the quake. In the early weeks, needs assessments were extremely difficult to conduct due to the overwhelming infrastructure damage,

including inaccessible roads, non-operational communication lines, and very limited access to transportation. However, as the situation improved, assessments were conducted by multiple organizations including the USG, U.N., and NGOs. The U.S. military and OFDA DART conducted assessments on the ground with the U.S. military reporting findings back to U.S. SOUTHCOM and the OFDA DART to the USAID Response Management Team (RMT) in Washington (Guha-Sapir et al., 2011).

Primary limitations to information management in the Haiti response circled around two main themes: "There were limited data available for tactical and operational decisions" and "there were overwhelming requests for data and information from policy leaders in Washington that made systematic data collection more difficult" (Guha-Sapir et al., 2011, p. 78).

d. Information Management and Sharing

U.S. SOUTHCOM made the early decision to utilize unclassified information systems to the fullest extent possible. This early decision greatly improved the ability to share information with the Government of Haiti (GOH), U.N., and NGOs (Guha-Sapir et al., 2011). The U.S. military utilized two primary portals to manage and share information: All Partners Access Network (APAN) and Intellipedia.

APAN was utilized to store and share information externally with partners on the ground including the GOH, U.N., and NGOs. However, the major limitation of APAN for external information sharing is the requirement to register and request access to the information stored on APAN. The humanitarian community, following the principles of impartiality and independence, is concerned with registering on a DoD website where their actions are monitored and documented on the website (JHOC, personal communication, September 18–19, 2017). This requirement discourages not only their participation and willingness to share information on the site but also their access to information available on the site. Furthermore, APAN was often seen as "a dumping grounds for data" (Guha-Sapir et al., 2011, p. 79), lessening its effectiveness. This suggests that significant attention is needed in the categorization, labeling, verification of validity, and organization of information stored on APAN. Additionally, many open source documents were editable by

a wide range of users, which discredited the accuracy and trustworthiness of the information stored on the site (Guha-Sapir et al., 2011). Guha-Sapir et al. (2011) suggested that "information managers and specialists should be assigned to manage these websites" (p. 80).

Several agencies utilized Intellipedia to share information internally among the USG, including the DoS, USAID, Health and Human Services, DoD, Coast Guard, and others (Guha-Sapir et al., 2011). This site was underutilized during the Haiti response. However, the site served as "a good example of internal communication and successfully kept USG personnel within the Interagency apprised of the situation and news on the response" (Guha-Sapir et al., 2011, p. 80).

JTF-H established a presence at the Humanitarian Aid Coordination Centers (HACC). The mission of the HACC, as identified by Cecchine et al. (2013), was to

1. coordinate, synchronize, track and assess HA operations
2. create and maintain a humanitarian common operational picture
3. integrate with all stakeholders in order to develop prioritized lists of support requirements
4. serve as the primary JTF interface with U.N., NGO, and interagency partners (p. 44)

About half of the HACC members were located at the U.S. Embassy in Port-au-Prince and the other half at the U.N. Logistics Base partnered with OCHA, U.N. Stabilization Mission in Haiti (MINUSTAH), partner-nation militaries, and the international humanitarian community within the U.N. cluster system (Cecchine et al., 2013, p. 44). Clusters of support agencies submitted requests for assistance (RFAs), validated by the U.N., detailing the identified needs to support an NGO in providing HA processed to the MINUSTAH Joint Operations and Tasking Center (JOTC). If MINUSTAH was unable to provide assistance and USAID/OFDA determined that military support was required, USAID/OFDA would then issue a mission tasking matrix (MITAM) to the JTF-H for execution (Cecchine et al., 2013).

One major limitation was that JTF-Haiti received reports that the MITAM process was not responsive enough and therefore some NGOs bypassed the MITAM process in order to seek assistance faster (Cecchine et al., 2013). If or when the MITAM process is

bypassed, the DoD faces the potential of responding to unvalidated requests resulting in a lack of reimbursement through Overseas Humanitarian, Disaster, and Civic Aid (OHDACA) funding. Additionally, the DoD may commit to a request that is not actually required, or of a lower priority, therefore preventing itself from responding to an otherwise required request, or a request of a higher priority, as determined by the HN, U.N., and USAID. This is an example of the United States taking on excessive burden, beyond what is requested as a unique capability.

2. Japan Earthquake and Tsunami 2011: Operation Tomodachi

Unlike many countries stricken by previous disasters, Japan is a first world country with a strong economy, an established military with many of its own fixed and rotary wing assets, and capable authorities at the local and state level. This makes the Japan disaster case unique even without considering the large presence of U.S. military stationed in and around Japan. This unique case presented many challenges to Major General Mark Brilakis, Comanding General, 3d Marine Division, Joint Force Land Component Commander (JFLCC) (MCCLL, 2011).

a. Pull versus Push Support

According to the MCCLL (2011) report, "the relief mission was operationally straight forward: identify unique military capabilities that are needed, deploy and operate them; however, a primary operational challenge was in identifying what assistance the Japanese required" (p. 18). The 3d Marine Expeditionary Force (III MEF) had excess capacity to provide relief. However, the struggle was identifying what resources existed to meet the requirements demanded on the ground (MCCLL, 2011). Although III MEF deployed a HAST within the first 24 hours after the earthquake, the capabilities of the HAST were underutilized due to the restrictions placed on the Japan Self-Defense Force (JSDF) by Japanese civil authorities (MCCLL, 2011). The HAST was not fully utilized until approximately seven days after arrival. According to Major General Brilakis, "We [III MEF] ended up having to work hard to generate the requirements. … That inability to do what we do best, which is get in fast and start to operate very quickly, was very, very

limited in this operation and led to … frustrations, particularly on the United States' side" (MCCLL, 2011, p. 18).

The Government of Japan (GOJ) and the Japanese Self Defense Force maintained control of the relief efforts in Japan. In some cases, the JSDF demanded that it deliver the supplies to its own people while the United States was to deliver supplies to locations designated by the JSDF (MCCLL, 2011). Over time, the JFLCC staff role consisted of "taking taskings from the JSDF, identifying and prioritizing requirements for support, matching assets and equipment to each task and monitoring execution" (MCCLL, 2011, p. 18). Overall, from a U.S. military perspective, the GOJ and civil authorities proved to be capable and competent in managing response efforts to the disaster. Therefore, as big as the disaster was in Japan, the requirements of U.S. support differed greatly from those of previous disasters (MCCLL, 2011).

When analyzing the GOJ and the JSDF in disaster response, it is clear that the Japanese disaster presented the need for the U.S. military to find a balance between pushing and pulling relief. The GOJ and the JSDF were competent and capable of providing most of the relief in Japan. Additionally, Japan, as the host nation, insisted on staying in control of the response. Therefore, the U.S. approach to push support was generally ineffective and unwanted. One significant challenge for III MEF was having the patience to respond to requests, knowing that they could potentially provide more support. However, the support was provided "by, through, and with the host nation" (MCCLL, 2011, p. 19). In this case, the GOJ and the JSDF insisted largely on conducting their own needs assessments and determining their own gaps. Therefore, the most efficient and effective U.S. support for this operation was provided on a pull basis, responding to requests generated by the GOJ and the JSDF, vice attempting to push capabilities and assets.

b. Information Collection

Information collection in Japan was facilitated largely through the use of airborne intelligence, surveillance, and reconnaissance (ISR) assets. The GOJ was willing to grant access for the use of airborne ISR assets, far beyond that of other humanitarian response cases in the past (Moroney et al., 2013). U.S. military ISR assets were utilized to establish

greater situational awareness, as well as to share information with Japanese counterparts (Moroney et al., 2013).

In the first 48 hours, the U.S. Air Force (USAF) launched an RQ-4 Global Hawk from Andersen Air Force Base in Guam. It provided imagery of affected areas to inform damage assessments and aid the GOJ in determining "priorities in near-real time" (Moroney et al., 2013, p. 93). In addition to the Global Hawk, the USAF employed the South Korea-based U-2. The U-2 is a high altitude manned aircraft, which captured "high-resolution, broad area-imagery of disaster-affected areas" (Moroney et al, 2013, p. 93). Additionally, the U.S. Navy employed the P-3 Orion maritime surveillance aircraft. The P-3 Orion is a manned aircraft used to conduct aerial search missions. Crews of the Orion surveyed Japan's northern coastline searching for survivors visually and utilizing surface-search radar (Moroney et al., 2013). The crews reported information about water and port risks that could impede ships in support of the relief efforts (Moroney et al., 2013).

According to Moroney et al. (2013), the U.S. DoD and Department of Energy played a significant role in assessing the nuclear disaster at the Fukushima Power Plant. Together, they formed a U.S. interagency team of around 20 personnel that conducted data collection and analysis. However, this team provided little consensus in making recommendations due to the lack of USG standards and varying approaches utilized by the different agencies (Moroney et al., 2013). Although it is important that the U.S. military played a significant role in conducting assessments and information sharing associated with the nuclear disaster, the competency tends to fall more under the scope of Foreign Consequence Management rather than HA/DR. Therefore, we believe the nuclear disaster and the role of the DoD should be analyzed separately from HA/DR operations, as this was a situation unlike any other disaster.

c. Assessments

The JSDF played a primary role in delivering aid in response to the disaster in Japan. The established relationships and presence of the U.S. military in Japan make Operation Tomodachi unique. The JSDF depended heavily upon direct military-to-military relationships to provide relief. The combined presence and established relationships

facilitated a rapid response and a surge of relief to the GOJ and local populations. However, assessments and validation of relief requests were lacking in the U.S. response.

In many cases, pushing relief resulted in redundancy, waste, and general inefficiencies. For example, at the request of the GOJ for "water," one million bottles of water were provided (Moroney et al., 2011). Providing bottles of water as a relief supply is often viewed as a logistical burden that can prevented by choosing better alternatives for fresh water (JHOC, personal communication, September 18–19, 2017; HART, personal communication, September 26–29, 2017). Along with other examples, providing the excessive amount of bottled water was largely attributed to the "vagueness of the request" (Moroney et al., 2011, p. 98), as well as a lack of validation of the need. Other examples include the USMC deployment of a Chemical-Biological Incident Response Force (CBIRF), several unmanned aerial vehicles, and 26 different types of water pumps (Moroney et al., 2011). In the case of the USMC CBIRF, 100 personnel were deployed for 30 days and were never requested or required (Moroney et al., 2011). Often, requests for assistance went from prefecture leaders to their known point of contact in the JSDF. The JSDF leader would then process the request to their known point of contact at the U.S. component command (Moroney et al., 2011). These requests lacked proper prioritization due to an absence of "metrics to make the determination of needs objective" (Moroney et al., 2011, p. 99).

During Operation Tomodachi, the DoD struggled with coordination issues with respect to exit strategies. During the needs assessment process, it is important to use standardized metrics to determine the objective for assistance and transition. However, the different U.S. military components lacked standardization in metrics or thresholds for their exit strategies (Moroney et al., 2011). This resulted in the Japanese being uncertain of the extent of U.S. military support and of how much longer the U.S. military would be supporting the GOJ (Moroney et al., 2011).

d. Information Sharing

The U.S. embassy in Tokyo established a Bilateral Assistance Coordination Cell (BACC), which included all USG agencies. It was modeled after the USAID MITAM

coordination system (Moroney et al., 2013). The BACC is thought to be similar in nature to the JOTC in Haiti or the HUMOCC in later cases. Additionally, a Bilateral Coordination Council (BCC) was established. The BCC included only U.S. and Japanese military officials and was established in three locations (Moroney et al., 2013). The BCC did not include any civilian agencies and is thought to be similar in nature to the HACC in Haiti or the MNCC in later cases. Three U.S. Army liaison officers (LNOs) and one USMC LNO were embedded with the JSDF and positioned at the BCC. LNOs were responsible for reporting information to senior authorities and answering questions (Moroney et al., 2013).

One major limitation to information sharing and communication was APAN. The goal of U.S. military leadership was to conduct all planning over the unclassified system APAN (Moroney et al., 2013). According to Moroney et al. (2013), there were four major issues with this approach:

1. "GOJ was not willing or even able to upload information considered For Official Use Only (FOUO) and/or proprietary to APAN, particularly in terms of the nuclear response" (p. 99).

2. "APAN had not been incorporated into security cooperation exercises with the JSDF and, as a result, the GOJ was unfamiliar with it and even a little skeptical of its utility" (p. 100).

3. "APAN is primarily a military system; civilian government organizations and NGOs did not have access" (p. 100).

4. "Foreign disclosure and over-classification (i.e. using 'no foreign nationals' unnecessarily) was also reported as an issue" (p. 100). There was an insufficient number of "foreign disclosure experts at the various command locations throughout Japan" (p. 100).

It is almost impossible to separate the issues experienced with information sharing without noting the complexity and confusion surrounding the U.S. military command and control structure established during Operation Tomodachi. On March 11, 2011, U.S. Pacific Command (U.S. PACOM) released a task order designating the commander, U.S.

Forces Japan (USFJ), as the supported operational commander to provide foreign humanitarian assistance to Japan. However, USFJ contained no operational planning capability. Subsequently, over the ensuing days and weeks, major command relationships were redesignated and assigned. Two separate Joint Task Forces (JTFs) were assigned: JTF-505 for phased evacuation of American citizens and designated foreign nationals, and Joint Support Force Japan (JTF-519) for HA/DR support. The two joint forces were, as the III MEF commander noted, "totally interconnected by politics, location, personnel and resources" (MCCLL, 2011, p. 10). In addition to these two, in the first week of April, a Consequence Management Support Force (CMSF) was formed as a third organization (MCCLL, 2011). The assignment and designation of separate task forces for missions so closely related to the response of the disaster "proved confusing and it was unclear who was really in charge" (Moroney et al., 2013, p. 92).

3. Philippines Typhoon Haiyan (Yolanda) 2013: Operation Damayan

At the outset of Operation Damayan, U.S. military planners knew that Filipino devastation was severe. MARFORPAC began preparing for an HA/DR mission, although the JTF was not established until November 16. What initial needs assessments could not yet confirm was that Typhoon Haiyan affected over 10% of the Filipino population and was the deadliest natural disaster on record in the Philippines (Lum & Margesson, 2014). This claim is substantial considering the average 2.5% loss of Filipino gross domestic product each year from natural disasters and $1.5 trillion economic loss from natural disasters in the 45 years leading up to Typhoon Haiyan (Jumamil-Mercado et al., 2015). In order to fill in these information gaps for decision making, numerous actions were taken.

a. Needs Assessments

Joint Special Operations Task Force–Philippines (JSOTF-P), located about 600 miles south of the disaster zone, provided firsthand primary data observations to the JTF (Parker et al., 2015). The rapid delivery of information, hours after a disaster has struck, can be a great asset to military planners. Colonel Walter Anderson, the III MEF G4 and JTF-505 J-4, stated, "JSOTF-P was a force multiplier because they were already on the ground and gave us ground truth on assessments and what the requirements were" (Luckey,

2014, p. 12). In addition, on November 9, U.S. PACOM ordered III MEF to deploy a HAST to the Philippines (Luckey, 2014). This HAST linked up with USAID DART personnel who were already on the ground on November 8. This particular DART team included USMC Major William Soucie, who was on the OFDA staff as a national fellow to USAID/OFDA. Major Soucie deployed to U.S. PACOM headquarters in JBPHH, HI, where he assisted with the development of the U.S. PACOM execution order (Luckey, 2014). Such integration between the USMC and USAID/OFDA for future operational planning should be encouraged to deconflict the two organizations' efforts.

On November 10, the OFDA DART reached Tacloban, Cebu, and other areas to conduct needs assessments (Luckey, 2014). USAID/OFDA was not acting alone in assessments; three U.N. disaster assessment and coordination (UNDAC) teams also deployed to conduct initial rapid assessments (CFE-DMHA, 2014). Thanks to modern meteorological forecasting, the international community had a few days to prepare for the effects of Typhoon Haiyan. As a result, initial assessments were ready quickly. The host nation had provincial reports released as early as November 9 (U.N. OCHA, n.d.). NGOs such as Save the Children, Telecoms Sans Frontieres, Catholic Relief Services, and several others had completed initial assessments between November 10 and 15. The first assessments from these sources and others informed USG priorities, funding requirements, and the identification of unique DoD capabilities required to enable international relief in the Philippines (Luckey, 2014).

Overall, 50 organizations uploaded hundreds of assessment reports to the official assessment registry on www.humanitarianresponse.info. The first UNDAC report was not released until December 2, 2013, while the U.N. OCHA MIRA report was released on November 29 (U.N. OCHA, n.d.). HA/DR planners must be willing to make decisions based off information from a myriad of organizations in the initial hours after a disaster.

b. Intelligence, Surveillance, and Reconnaissance

During the first week of operations, a focus was placed on conducting intelligence, surveillance, and reconnaissance (ISR) with several non-traditional methods (Luckey, 2014). Targeted information for ISR activities included road conditions, airports, seaports,

landing zones, and identification of distressed persons (Luckey, 2014). Military aircraft lifted DART members throughout the AO to conduct assessments (Parker et al., 2015). Pilot debriefings after each sortie added to situational awareness (Luckey, 2014). Counterintelligence and human-intelligence debriefed military personnel as well as internally displaced persons (IDPs) for information on potential threats, security concerns, and key leaders, and also to gauge the effectiveness of relief efforts (Luckey, 2014). Counterintelligence partnered with civil affairs teams to ascertain similar information from the population and victims. Overall, the JTF collected and processed over 900 images during Operation Damayan (Luckey, 2014). Despite the effectiveness of these ISR collection methods, aiding the assessment process with ISR was noted as one of the key shortfalls of JTF-505.

The JTF-505 commander's guidance included the importance of information sharing and maintaining products at an unclassified level as much as possible (Luckey, 2014). JTF-505 largely adhered to this guidance even though ISR products were disseminated over exclusive means such as APAN, SharePoint, and email distribution lists rather than being posted to well-trafficked web portals such as Relief Web or www.humanitarianresponse.info. As a result, many organizations still felt isolated from U.S. military resources (CFE-DMHA, 2014). Some organizations, such as the Philippine Red Cross and World Bank, resorted to the use of low-cost drones for rapid assessments when satellite imagery or other ISR products were not available (CFE-DMHA, 2014).

Directly engaging victims for the purpose of primary data collection, as conducted by the civil affairs and counterintelligence teams, is beyond the scope of unique U.S. military capabilities (S. Catlin, personal communication, August 24, 2017).[3] In addition to this, there are several reasons that military actors should avoid such personal interaction with victims for the purpose of determining needs. In the conduct of needs assessments, humanitarian organizations coordinate to ensure that certain victim populations are not over surveyed (ACAPS, 2014). Public discontent can occur if victims are approached by numerous organizations claiming to provide aid without seeing desired results in their

[3] This information comes from an interview with Steve Catlin, USAID/OFDA, and the authors of this report.

community. Humanitarian organizations carefully analyze which questions are asked and to whom they are asked in an attempt to gather necessary information that can inform decisions without overlapping efforts and creating such discontentment. The U.S. military, though experienced in similar types of data collection, does not receive ample training for the HA/DR operating environment. Furthermore, humanitarian organizations wish to maintain the perception of neutrality and operational independence when directly engaging victims for NA (CJCS, 2014; U.N., n.d.). Uniformed military personnel, acting unilaterally on behalf of the humanitarian community, can damage this perception of neutrality and operational independence (HART, personal communication, September 26–29, 2017). Readers may better understand this concept by imagining uniformed, foreign military intelligence-gathering activities in the midst of the 2017 Houston or Florida relief efforts.

c. Secondary Data Collection

Various after action reports describe the secondary data collection throughout the operation as sufficient. The JTF deployed with all-source analysts, meteorological and oceanographic (METOC) capabilities, topographic capabilities, and imagery analysis capabilities (Luckey, 2014). Imagery collection, as already stated, used methods such as airborne ISR and satellite imagery (CFE-DMHA, 2014). These capabilities form a well-rounded secondary data collection effort when well managed. Secondary data collection such as this should be used by JTF planners to answer requests for information (RFIs), to maintain a common operational picture, and to monitor needs or capacity of the affected area. Dissemination of this information to other actors over information-sharing platforms can greatly benefit the relief effort.

d. Information Sharing

JTF-505 utilized multiple platforms to share information. Situation reports and ISR products were distributed mainly using APAN, SharePoint, and email distribution lists (Luckey, 2014). The Pacific Disaster Center's DisasterAWARE Powered Emergency Operations provided hazard information, impact models, and assessment data to both JTF-505 and any other interested actors (CFE-DMHA, 2014; Pacific Disaster Center, n.d.). JTF-505 utilized APAN as a means of unclassified information sharing, with Intelink as the

repository site for products before being posted on APAN (Luckey, 2014). Unfortunately, early in the operation, the use of APAN was restricted by the lack of bandwidth (CFE-DMHA, 2014). Once APAN access improved, JTF staff reported much higher quality communication with the armed forces of the Philippines (AFP) center at Camp Aguinaldo (Luckey, 2014). The AFP even continued to use APAN as a means of communication and information sharing after the JTF officially stood down (Luckey, 2014). It is important to remember that APAN and SharePoint restrict access to those individuals with common access cards or passwords assigned by the unit administrator. As a result, many humanitarian organizations do not attempt access to APAN. The author's personal experience was that it only took 24 hours to receive a password to APAN. However, humanitarians frequently do not even attempt APAN access because of the availability of so much data elsewhere in U.N. web portals, including Relief Web and www.humanitarianresponse.info. In order to mitigate this, HA/DR planners can make DoD reports available via these U.N. web portals, effectively manage APAN account requests, and publicize JTF information management protocols at coordination centers early in the operation.

e. Coordination Centers

The JTF-505 operations center was located on the AFP's Villamor Air Base in Manila. The multinational military coordination center (MNCC) and the national disaster risk reduction and management council (NDRRMC) were all collocated on Camp Aguinaldo in Manila (Parker et al., 2015). As a result, central coordination of the relief efforts all took place in Manila. This is not ideal since Manila was not one of the severely affected areas and is located on the island of Luzon, geographically separated from the disaster-stricken areas (Parker et al., 2015). This isolation presented the opportunity for low situational awareness among planners located in Manila. The JTF commander made the decision to establish headquarters in Manila to minimize negative impacts on the disaster-affected area (Luckey, 2014). The MNCC was not established for several days, which caused a degraded common operational picture among all foreign militaries in the early days of the disaster (Jumamil-Mercado et al., 2015). Nevertheless, the MNCC served as a focal point of coordination, information sharing, and prioritization of military relief

missions (Parker et al., 2015). Once operational, the MNCC's relatively close proximity to JTF headquarters allowed for close coordination with AFP and other foreign militaries.

JTF liaison officers were placed in the MNCC, U.S. embassy, USAID DART, U.N. centers, and NGO cluster meetings. The JTF also hosted liaison officers from USAID/OFDA in the main and forward headquarters. Of all these positions, Lieutenant General Wissler, the JTF-505 commanding general, viewed the MNCC position as most important. Lieutenant General Wissler's deputy commander, an Army major general, attended the MNCC synchronization meetings every night. Lieutenant General Wissler stated, "Liaison officers are critical. Having the right liaison officers, the right grade, the right structure, and the right location in those organizations having impact on the operation is critical" (Luckey, 2014, p. 26). At a combatant command level, which this research is not focused on, U.S. PACOM established an international coordination team as an "enabling mechanism for the effective and speedy provision of military capabilities and resources to support international efforts in the U.S. PACOM AOR," which met in Camp Smith, HI (Parker et al., 2015, p. 9).

f. Challenges

A standout hindrance on JTF information management was the limited available bandwidth (Luckey, 2014). Tactical communications networks originally brought into the ROP were designed for a limited number of users such as the Deployable Joint Command and Control (DJC2), which supports 60 users. These tactical network capacities proved insufficient when the JTF was established and the staff enlarged (Luckey, 2014). Furthermore, tactical networks prevented access to key websites such as ReliefWeb and the NDRRMC website. Users even reported having problems accessing APAN and SharePoint portals from the tactical networks (Luckey, 2014). Other criticisms of the tactical networks were that it was "too slow, unreliable, and create[d] an unnecessarily large footprint for HA/DR missions" (Luckey, 2014, p. 35). In order to mitigate this friction point, a commercial "Next Generation Enterprise Network" was established for unclassified use (Luckey, 2014, p. 35). Even though establishment of this network required communication with support personnel located within the continental United States, it

provided the necessary increase in bandwidth and unclassified access (Luckey, 2014). Similar use of commercial capabilities was evidenced in the 2015 Nepal response. Access to unclassified sources and foreign sites is necessary in a HA/DR operation to realize mature information-sharing practices (CFE-DMHA, 2014).

4. Nepal Earthquake 2015: Operation Sahayogi Haat

The 7.8 magnitude earthquake on April 25, 2015, immediately gained the attention of international humanitarian organizations. Although the number of casualties and damage in Nepal did not exceed the other case studies covered in this research, initial estimates projected a much higher level of devastation. Humanitarians did know aid would have to be delivered to very remote mountainous locations and immediately sought more information to tailor relief efforts.

a. Initial Assessments

Initial assessments often start with very simple forms of communication. After the earthquake in Nepal, the first DoD personnel to provide primary assessment data were 26 Army Green Berets in U.S. Special Forces Operational Detachment-Alpha (ODA) 1121 who were already in the AO. Hours after the disaster struck, these ODA members traversed Kathmandu on foot and reported damage on critical infrastructure such as roads, bridges, and hospitals. The ODA initial assessments also included information on human suffering and displaced persons (Elwood, 2016).

b. Joint Humanitarian Assistance Survey Team

The Joint Humanitarian Assistance Survey Team (JHAST) arrived in Nepal on April 30. Brigadier General Paul Kennedy led the JHAST, comprised of 22 personnel. This team's task was to liaise with the OFDA DART and advise on unique DoD capabilities that could aid the international response. The U.S. PACOM warning order to the commander of Marine Forces Pacific (MARFORPAC) included tasks to "establish a joint assessment team" and "conduct humanitarian assessment survey operations … in support of USAID/OFDA" (Troutman, 2016, p. 12). Following official authorization to provide support on April 28, the JHAST deployed within 24 hours (Troutman, 2016). The JHAST

supplied information to U.S. PACOM staff, short of a full assessment report, which led to the creation of JTF-505 (Troutman, 2016). Further actions of the JHAST included liaison with the U.S. embassy, establishing a close relationship and consistent communication with the DART team leader (Troutman, 2015b; Troutman, 2016).

One key limitation of the HAST was a lack of meteorological and oceanographic (METOC) representation. Without a METOC representative, the HAST team could not identify the lack of host nation METOC capability and failed to deploy any DoD METOC capabilities throughout Operation Sahayogi Haat. JTF-505 was still able to receive forecasts on weather from satellite data but was unable to verify these forecasts with any sensors on the ground. Some sectors in Nepal had no host nation sensor capabilities to verify satellite data, which was frequently off base due to Nepal's many micro-climates (Troutman, 2015a).

c. Use of Nontraditional Intelligence, Surveillance, and Reconnaissance

JTF-505 utilized non-traditional ISR (NTISR) collection methods over traditional ones. The unique meteorological and political environment of Nepal prevented the use of most theater-level capabilities. NTISR methods employed included attaching a combat camera detail to each sortie in 1st Marine Air Wing (Troutman, 2015a; Troutman, 2016). MAGTF Secondary Imagery Dissemination Systems (MSIDSs) were also used to capture and transfer photos. JTF-505 had three MSIDSs available for Operation Sahayogi Haat (Troutman, 2015a; Troutman, 2016). MSIDSs are digital imagery technology designed to transmit imagery back to a MAGTF commander in near real time. Combat camera and MSIDS combined to form a capable NTISR capability (USMC Concepts and Programs, 2017). Information gathered from NTISR were collected into post-mission reports and posted on APAN for other organizations to utilize (Troutman, 2015a).

d. Collection of Information

In addition to NTISR, JTF-505 collected information from open sources. JTF-505 gathered service members from military occupational specialties including 0241, topographic and imagery interpretation specialists; 0261, topographic analysts; and 0231, intelligence specialists from 3d Intel Battalion and throughout III MEF. 0231s were

repurposed as Open Source Intelligence (OSINT) analysts. These OSINT analysts, along with other Marine Corps intelligence activities, drew information from the internet and social media on topics such as road conditions, availability of electricity, presence of camps, displaced persons, and popular reaction to disaster aid. These open sources, of course, had very little information on Nepal's most remote areas, which had to be covered with NTISR. Other open sources included websites used by the U.N. and NGOs (Troutman, 2015a).

One key limitation of JTF-505 data collection was a lack of linguists. Without linguist capabilities, many open sources could not be analyzed. A second key limitation of information collection was security protocols of Navy and Marine Corps Intranet (NMCI), which prevented access to many foreign sites that would contain useful open source information. A third limitation of JTF-505 information collection efforts was the lack of open source, data collection capabilities of 0231 intelligence specialists. After repurposed for OSINT, it became clear that 0231s did not have the training, tools, or skills necessary for such a rapid operation with widespread information sources (Troutman, 2015a; Troutman, 2016).

e. Dissemination of Information

JTF-505 posted a daily unclassified information summary (Troutman, 2015a; Troutman, 2016). The purpose of this information summary was to create a common understanding among all actors. Information was broken down by sector and district and included a summary of collections, meteorological impacts, and useful graphics from the U.N. or USAID. This summary was disseminated on APAN, the JTF-505 Intel Link website, and to an email distribution list (Troutman, 2015a). Other interviews from JTF staff indicated that APAN was used only sparingly, such as the III MEF information management officer who said "APAN … was not used much inside the JTF-505. Most of our information sharing was done on SharePoint" (Troutman, 2016, p. 32). JTF-505 also made use of Google Earth as a fall-back system for creating a common operational picture. Google Earth was used partially because in order to distribute unclassified products, these products had to be made with unclassified systems. JTF-505 also used the topographic

production capability and the tactical exploitation group, but Google Earth was described by the III MEF G-2 as “the most responsive C2 application available” (Troutman, 2015a, p. 6). Google Earth files were created and disseminated with details such as “boundaries, terrain features, IDP [internally displaced persons] counts, … landslides, road closures, relief deliveries, etc.” (Troutman, 2015a, p. 6). Throughout the course of Operation Sahayogi Haat, over 800 intelligence products were created and shared (Troutman, 2015a). An example information summary from Operation Damayan is listed in Appendix A.

One key limitation to information sharing was the lack of non-secure internet protocol router (NIPR) assets and bandwidth available to JTF-505 (Anderson, 2015). In order to deal with the rapid influx of NIPR users, a tactical NIPR network was set up using non-garrison assets. Having two networks that could not interface caused issues with version control of products and sharing information, even between JTF personnel. Expeditionary Command and Control Suite (ECCS) and Deployable Joint Command and Control (DJC2) are two communications capabilities used by JTF-505 that received criticism for their inability to scale to a larger staff size as Operation Sahayogi Haat progressed (Troutman, 2016). A universal needs statement (UNS) for “increased capability of the ECCS” was originated by III MEF and endorsed by MARFORPAC, but the authors are unaware of this UNS’s current status (Troutman, 2016, p. 30). From a readiness perspective, neither these assets, nor any others used to establish the JTF-505 network, are considered mission essential according to the Marine Automated Readiness Evaluation System, which means the Marine Corp’s ability to command and control in HA/DR operations is not well measured by the Defense Readiness Reporting System (Troutman, 2016).

f. Coordination Centers

JTF-505 integrated with the multinational military coordination center (MNMCC) with liaison officers who attended daily meetings and coordinated JTF operations with other actors in the AO (“Interview with U.S. Marine Corps Brig.,” 2016; Troutman, 2016). The MNMCC was collocated with the Nepal Army Headquarters and included a humanitarian-military coordination center (HuMOCC; Khari, 2016; Troutman, 2016). The

meetings at the MNMCC were lightly attended, at best, by the other two large foreign military actors—China and India (Anderson, 2015). Despite the lack of Chinese and Indian representation, the United States remained active and consistent participants in all MNMCC meetings. Nepalese military officers also attended JTF-505 meetings at the U.S. embassy as liaisons (Troutman, 2016). Liaison officers were also exchanged with the U.N. logistics cluster lead, World Food Program, with the oversight of USAID DART members ("Interview with U.S. Marine Corps Brig.," 2016). These interagency coordination efforts and networks were essential to ensuring seamless operations and information exchange between the JTF, USAID, government of Nepal, U.N., other foreign militaries, and NGOs (Sanderson & Ramalingam, 2015; Troutman, 2016).

g. Class A Mishap

In the aftermath of a 7.3 magnitude aftershock on May 12, a UH-1Y Venom, call sign "Vengeance 01," delivered relief supplies to Charikot (III MEF PAO, 2015; Troutman, 2016). After delivering the supplies at Charikot, five Nepalese casualties were taken aboard Vengeance 01 for evacuation to a medical treatment facility. Tragically, the helicopter crashed during the return flight, resulting in the death of six Marines, two Nepalese military members, and the five Nepalese civilians (Troutman, 2016). According to the results of the command investigation, the Class A mishap most likely occurred as a result of unpredictable weather patterns along an unplanned and unfamiliar route selected by the pilots in order to reach medical assistance as soon as possible (III MEF PAO, 2015). The heroic actions of these individuals and the tragic nature of this mishap cannot be overstated.

Lessons to be learned from this tragedy about the conduct of humanitarian assistance include the solemn reminder to properly conduct needs assessments (NAs) and information and knowledge management (I/KM). When the USMC is called to save lives and alleviate human suffering, unbridled ambition may dangerously tempt planners to ignore best practices or established doctrine related to the delivery of relief. The delivery of aid by Vengeance 1 was not a planned mission, launched in the immediate and chaotic aftermath of an earthquake without extensive route reconnaissance. The complex environment and heavy burden of HA/DR operations can stress the capabilities of even

experienced military professionals with the best equipment. Examples of the United States taking on excessive burden beyond what is requested as a unique capability can be found in every case study conducted in this research. Political, media, public, and moral pressures encourage a swift reaction with as much lifesaving capabilities as the responder can bring to bear. However, it is important to remember that the military response is a supporting effort to USAID, which must complement its response plan as the main effort. By allowing time for the host nation, USAID, and international community to assess and verify priority needs and gaps in capabilities, the military response can avoid overburdening its force or creating a dependency on U.S. military capabilities (S. Catlin, personal communication, August 24, 2017).

B. INTERVIEWS WITH USAID/OFDA AND UNDER SECRETARY OF DEFENSE FOR POLICY

In addition to the case studies, our analysis included interviews conducted with members of the Military Liaison Team with OFDA and the Under Secretary of Defense for Policy (OSD-P), Special Operations and Low Intensity Conflict, Stability, and Humanitarian Affairs department. The analysis includes a summary of the most relevant topics introduced during these interviews along with areas of focus for improvement with respect to future disaster responses and preparation.

1. Disaster Assistance Response Team and Humanitarian Assistance Survey Team Collaboration

I/KM and NA capabilities, brought by the OFDA disaster assistance response team (DART) are often very limited. The OFDA DART rarely conducts independent needs assessments but may gather limited information from an area of interest. DART members partially rely on word of mouth in the earliest days after a disaster to determine the needs of the host nation. OFDA members, as well as the DoD, can request imagery from the National Geospatial Intelligence Agency as a form of data collection. Even after receiving images, analytical efforts may appear quite modest compared to USMC intelligence standards. Supplementing DART efforts with thorough imagery and data analysis is a very beneficial way for the USMC to impact relief efforts in the earliest days after a disaster. In

addition to NA capabilities, each DART will deploy with an information officer who collates, packages, and distributes information. Guidance from individuals should inform DoD information management practices for the operation (L. Miani & R. Christ, personal communication, September 14, 2017)[4].

Humanitarian needs assessments take considerable training and knowledge to be conducted correctly. The Marine Corps, or any other DoD organization, does not officially conduct needs assessments post disaster. Even humanitarian assistance survey teams (HASTs) are only asked to assess what support the DoD can provide to the USG response in the specific context at hand. The role of the USMC in NA is to support other agencies' assessment activities, share information with other agencies, advise on DoD capabilities, and inform relief efforts with information from external assessments (S. Catlin, personal communication, August 24, 2017).

The DoD shares a unique relationship with foreign militaries around the world. Just as OFDA is often thoroughly knowledgeable about the host nation's disaster management agency and the HOs in an affected area, the combatant command staffs are often knowledgeable about the militaries and share a unique, pre-established relationship. Therefore, the DoD could support the DART with staff members capable of enhancing the DART's ability to conduct assessments (J. Solomon, personal communication, September 15, 2017)[5].

OFDA regularly focuses much effort to ensure needs are met without the requirement for DoD assistance. Therefore, DoD support to the DART during the early assessment process has the potential to influence early decisions and create a need for DoD assistance when it otherwise may not have been required or requested. According to the Oslo guidelines, the military is a last resort; therefore, the DoD should only supplement the OFDA DART when a JTF-sized response is anticipated. Even in the case of intelligence

[4] This information comes from an interview with Lino Mianai and Ryan Christ, USAID/OFDA; and the authors of this report.

[5] This information comes from an interview with Jobe Solomon, OSD-P; and the authors of this report.

analysis to support a JTF-sized humanitarian response, the requirement should be validated by the DART through the MITAM process.

2. Information Sharing

I/KM in humanitarian settings must include a shift in focus from information protection to information sharing (J. Solomon, personal communication, September 15, 2017). Low technology options such as internet service providers within the host nation, cellphones, and email should be considered for permissive settings. By utilizing such options, communication suites can be set up quickly, facilitating rapid growth of a command staff as well as enhancing collaboration with partner nations. In the past, MITAMs have been passed from USAID to the DoD by simply passing a USB drive back and forth. By avoiding reliance on complex C2 suites, the USMC can decrease its footprint on the host nation and possibly even improve information collection efforts.

Improvements will also come about by adapting to the information platforms that partner agencies have adopted. The U.N. uses Virtual On-Site Operations Coordination Center (OSOCC), the DoD uses APAN, OFDA uses multiple systems, Association of Southeast Asian Nations (ASEAN) uses Virtual OSOCC and the OPERA information system, and so forth. There is no mandate for or control over the system that each agency chooses to use (J. Solomon, personal communication, September 15, 2017). Expecting the greater community to utilize APAN is proving to be challenging at best, and in many cases, external participation is relatively nonexistent. In order to engage in the dynamic environment of information sharing of future disasters, the DoD must be familiar with the most commonly used systems and be prepared to openly share information with the greater community. Many of these agencies participate in dozens of relief efforts every year without the DoD present; it should not be expected that they would change their I/KM practices on the rare occasions when they are in the DoD's presence. Similar expectations, such as requiring clearances or common access cards for JTF meetings, will only hinder partnerships in a humanitarian operation (J. Solomon, personal communication, September 15, 2017; S. Catlin, personal communication, August 24, 2017).

3. Humanitarian Perspective

A distinct difference exists between the humanitarian perspective and the perspective of military members operating in HA/DR. Many of these differences have already been discussed, beginning with core humanitarian principles. Many capabilities that the USMC can bring to the table may not be favorably received by HA partners desiring to avoid a militarized persona. Such capabilities may include unmanned aerial vehicles, amphibious transportation, or even the use of APAN. The military mindset, on the other hand, frequently sees all useful capabilities as desirable. DoD planners enter into HA/DR operations with a desire to take on as much operational weight as possible, not realizing that they are in fact a supporting unit and considered a last resort in the Oslo guidelines. The DoD must realize that pre-conceived plans and SOPs developed may not fit perfectly into a specific disaster response and these plans must remain flexible and scalable. Such decisions will be made without perfect information. The chaotic setting of HA/DR operations prevents reliance on complete information. The military will never be considered a "humanitarian organization" but should strive to adapt its perspective and practices to better fit into an international relief effort (L. Miani & R. Christ, personal communication, September 14, 2017).

4. Direct Contact with Clusters

Most humanitarian organizations (HOs) are generally rooted in principles, such as neutrality, which deter and/or prevent direct interaction with the military. At times the principles may even push against direct contact with USAID/OFDA. However, USAID/OFDA is seen as a donor to many of these organizations, often providing the funding needed to carry out their missions. Likewise, if the HO absolutely needs military support such as airlift, it may coordinate directly with the military (J. Solomon, personal communication, September 15, 2017). However, the military must understand the humanitarian principles and respect the HO's decision and/or opinion on direct contact. In some cases, HOs like the World Food Program (WFP) have been more open to working with the military due to the common need to support the logistical requirements of the disaster.

5. Coordination with NMOs

In Damayan, requirements were not generated through the military coordinating with NGOs. The requirements were generated from OFDA attending meetings with the DoD, often in secured spaces. The DoD often did not invite NGOs. OFDA would attend the meetings and present validated requirements for missions. Coordination between the DoD and NGOs would then happen afterward. Often this was on the flight line with WFP or direct coordination tactically with other organizations (J. Solomon, personal communication, September 15, 2017).

The HUMOCC has been in place since Damayan. However, the C was changed from *center* to *concept*. This is primarily because "it has not gotten traction" (J. Solomon, personal communication, September 15, 2017). The HUMOCC concept came after the "Haiti experience of having everyone collocated in one place," which was referred to as the HACC (J. Solomon, personal communication, September 15, 2017). However, this creates almost a trading floor where civilians identify needs and capabilities to fill gaps, which often falls to the military. Requests are then generated directly to the military without proper vetting by OFDA. In the case of foreign partners who have less structure in their foreign support process, the HUMOCC may be good to increase the civilian/ military coordination. In the example of the United States, though, LNOs may be better with primary representation coming from OFDA (J. Solomon, personal communication, September 15, 2017). However, the HUMOCC "concept" is "actually in line with international best practices" for civilian/military coordination (J. Solomon, personal communication, September 15, 2017).

6. Training and Education

Current DoD education in the HA/DR field consists of the Joint Humanitarian Operations Course (JHOC) provided by OFDA. However, the course is not mandatory, no certification is achieved from the course, and little visibility is placed on the course from a DoD perspective. The JHOC course is presented more in a fashion of strategic messaging to the DoD. The JHOC is presented as a course to teach what the DoD should and should not be doing. However, the DoD should institutionalize this role and be teaching its own

members what they should and should not be doing. As is, the DoD is relying on another government agency, OFDA, to tell the DoD what they should and should not be doing (J. Solomon, personal communication, September 15, 2017).

OSD-P is interested in understanding how to codify some of the best practices and how to ensure that training is institutionalized. Currently (in 2017), much of the training is ad hoc (J. Solomon, personal communication, September 15, 2017). The DoD does not need to train people to fly planes and do logistics to support an HA/DR mission. The DoD needs to train people about the unique environment of HA/DR. This includes dealing with the host nation government and host nation military, working with OFDA in a supporting role, dealing with civilians, learning how to plan for transition, and understanding unique indicators of withdrawal (J. Solomon, personal communication, September 15, 2017).

Many joint training exercises between the United States and other foreign partners is conducted as preparation for future HA/DR operations. However, in reality, the HA/DR-framed training is a blanket to conduct training that otherwise could not or would not have been achieved because of political and/or strategic factors. By conducting exercises under the disguise of HA/DR, the DoD lessens its credibility as an actor in the humanitarian response community and also reduces the importance of training for future HA/DR missions (J. Solomon, personal communication, September 15, 2017).

7. HA/DR as a Mission of the DoD

According to OSD-P, there is no policy stating that HA/DR is a core mission of the DoD (J. Solomon, personal communication, September 15, 2017). HA/DR missions are civilian-led by the USG, with OFDA designated as the lead federal agency. The established process allows OFDA to focus priorities towards HA/DR, while the DoD can focus its priorities toward defense strategy and combat operations. However, the DoD is assigned the mission of supporting HA/DR when required (J. Solomon, personal communication, September 15, 2017). The DoD is utilized to fill the humanitarian gap. When that gap can be met by other competent organizations, the DoD's mission is over, and it transitions back to a focus on primary missions.

HA/DR for the USMC would be better classified as a critical mission, but not a core mission. The USMC is well-positioned to support HA/DR due to its expeditionary nature, forward positioning of MEUs, and reduced footprint of operating aboard ship while supporting the mission. Therefore, the USMC has a greater need to prepare to support future HA/DR missions than other branches of service in the DoD (J. Solomon, personal communication, September 15, 2017).

8. Improving Effectiveness

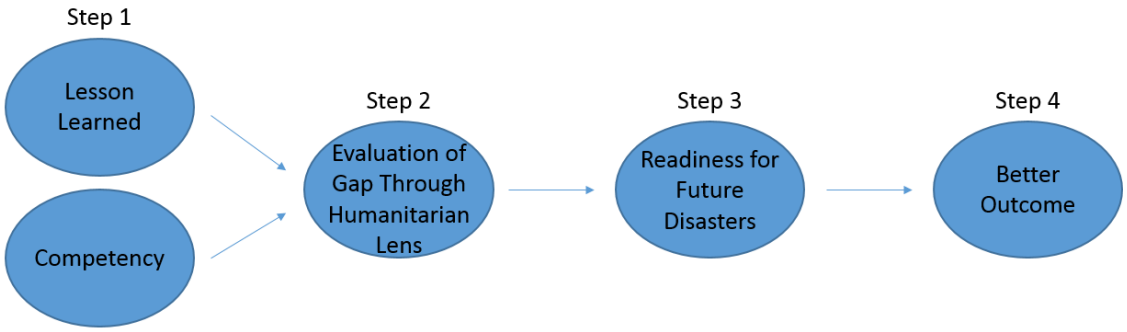
By improving effectiveness in HA, the USMC can set conditions for future mission success by fostering healthy relationships with the host nation and affected population. By improving efficiency, the USMC can decrease excessive burden on USMC units in support of HA/DR operations. Efficiency can decrease the financial burden on the DoD and the operational burden on USMC units. In order to apply these lessons learned, we offer a few recommendations in the final chapter (S. Catlin, personal communication, August 24, 2017).

IV. CONCLUSION

A. RECOMMENDATIONS

Recommendations were developed using a four-step HA/DR readiness identification process shown in Figure 14. This process was developed by the authors and adapted from the work of Apte (2017). Step one is the action taken by the responding JTF, or lessons learned through our analysis. Additionally, step one prescribes the action/lesson learned to the most applicable competency. Step two is a brief evaluation of the action/lesson learned from the perspective of a partner humanitarian organization. This humanitarian lens is relevant because the DoD conducts HA/DR missions in a supporting role and must partner with multiple other agencies. Step three is the action to improve readiness for future disasters. Lastly, step four is the better outcome achieved by the recommended readiness action.

Figure 14. HA/DR Readiness Identification Process.
Adapted from Apte (2017).



Our recommendations are applicable to the USMC, and many to the DoD as a whole as it prepares to support HA/DR missions in the future. These recommendations are limited to the scope of information and knowledge management, as well as the needs assessments. The recommendations are presented in Table 5.

Table 5. Readiness for Future Disasters

Action/Lesson Learned	**Competency**	**Evaluation of Gap Through a Humanitarian Lens**	**Readiness for Future Disasters**	**Better Outcome**
-Lack of (barriers to) information sharing external to U.S. agencies	-I/KM	-APAN requires registered access and tracks users/ organizations -APAN is associated with the USG/DoD (lack of impartiality) -There are many portals already established for information sharing -APAN is viewed as a data dump and information is not validated, verified, or organized in a meaningful and useful way	-Utilize an unclassified information sharing platform that is available to all actors including the larger humanitarian community	-Increased information sharing among the greater humanitarian community *This is one area where the DoD can "push" a capability regardless of the size/nature of the disaster
-Lack of sufficient communications architecture for a JTF staff in a HA/DR operation	-I/KM	-A communications architecture must support unclassified and multinational information sharing & rapid growth of a staff	-Establishment of ISP contracts and SOP for a JTF staff with SOFA partners and likely HA/DR nations	-OSINT analysts have access to all sources/unhindered communication with HA partners -JTF staff all on one network for improved collaboration
-Not following HA/DR SOP	-I/KM	-HA/DR environment is dynamic and fluid -Host nation, NMOs, and IOs have differing levels of capabilities in relief for each disaster	-Develop an SOP that is agile, flexible, and expedient to respond to the dynamic environment	-The JTF is capable of meeting the disaster demand effectively and efficiently
-Security protocols of NMCI prevent access to foreign sites	-I/KM	-Hundreds of foreign actors may operate in a large operation -Information becomes available from local people and businesses	-Establish host nation commercial internet service providers	-One scalable network supports a JTF-sized staff with unhindered access to foreign websites

Action/Lesson Learned	Competency	Evaluation of Gap Through a Humanitarian Lens	Readiness for Future Disasters	Better Outcome
		-Collaboration with foreign partners is paramount		
-Importance of LNOs to MNCC, OFDA, HN, etc.	-I/KM	-U.N. cluster system used to create unity of efforts -Possibly dozens of foreign militaries -United States response is a supporting effort to OFDA and host nation	-Personnel trained in JHOC and HART courses to serve as LNOs in a response -LNOs provided at the discretion of OFDA DART	-Full integration with the international relief effort -High tempo operations enabled by shared information and understanding
-Only Unclass reports and imagery can be useful in HA	-I/KM	-NGOs operate in an unclassified environment	-Surge foreign disclosure officers to support the HA/DR mission. -Allow humanitarian organizations to attend meetings with the DoD in an unclassified area that welcomes inclusion	-Unhindered communication -Improved I/KM with foreign partners and humanitarian community -Improved perception of DoD in humanitarian community
-Unresponsive MITAM process	-I/KM	-The HN, NGOs, and local populace are the primary responders in a disaster -The MITAM process is the primary means of OFDA validating requests and requesting DoD assistance	-Establish procedures to prioritize and process MITAM request with thresholds for maintaining a timely response	-Actors requesting assistance are more likely to use formal channels to request support -The JTF responds to validated and prioritized requests
-Lack of early assessments	-I/KM -NA	-Military should avoid direct contact with local populace -Many local actors including the host nation are	-Develop a rapid assessment capability inclusive of open source analysis to conduct early assessments	-The JTF is capable of meeting the disaster demand with an appropriate force and assets

Action/Lesson Learned	Competency	Evaluation of Gap Through a Humanitarian Lens	Readiness for Future Disasters	Better Outcome
		conducting early assessments -Open source information is often the most readily available and useful in HA/DR missions		
-NTISR methods improved capability and efficiency of a limited USG footprint	-I/KM -NA	- Operational airfields will be highly trafficked and each sortie carefully prioritized - Constantly changing operational environment - Knowledge of remote locations may only be available through aerial imagery	-Combat camera and MSIDS aboard relief sorties can collect precious information on a rapidly changing environment	-Better information provided to decision makers for operational employment
-Undefined exit strategy	-NA	-Military is a last resort -Military should only be used for unique capability and/or when civilian capacities are overwhelmed -Military should transition relief efforts to competent organization	-Develop an exit strategy based on dialogue with the disaster assistance response team (DART) leader and U.S. ambassador that determines when DoD's unique capabilities are no longer required	-Clearly defined exit strategies
-Insufficient OSINT analysis capabilities	-NA	-Real time information available on social media -Hundreds of international actors attempt to collaborate on various forums in a large scale relief effort -Information on road conditions,	-OSINT analysts capable of supporting rapid operations with information from widespread and multinational sources	-OSINT collection from multinational sources inform decision makers with near real time information

Action/Lesson Learned	Competency	Evaluation of Gap Through a Humanitarian Lens	Readiness for Future Disasters	Better Outcome
		availability of electricity, presence of camps, displaced persons, and popular reaction to disaster aid		
-METOC representatives must be included in the HAST	-NA	- Host nation may have limited METOC capabilities in remote areas - Host nation METOC capabilities may be degraded - Follow-on weather patterns may significantly impact the affected population	- HAST includes METOC representation	- USMC METOC capabilities complement HN capabilities to fill critical gaps and inform operations
-Counter-intel and civil affairs personnel conducted primary data collection with victims	-NA	-Coordinated needs assessments (CNAs) ensure accurate representation of the population -All sampling should be purposive - Avoid assessment fatigue of the population -Uniformed personnel questioning disaster victims creates a militant and threatening image	-Partner with OFDA or host nation personnel, trained in primary data collection to answer specific RFIs about the affected population	-Decreased burden on the response force -Maintain positive relations with humanitarian community and host nation -Reliable information for decision makers
-C2 suites not reported on DRRS	-I/KM	-Low technology options are best for initial days after a disaster -C2 capabilities will grow as more relief efforts arrive	-DJC2, ECCS, and other anticipated C2 suites should be added to DRRS report for MEBs. SOPs plan for worst-case scenarios for establishing C2.	-MEBs are ready to rapidly respond with low technology options and later with robust C2 suites.

B. SUMMARY

The Marine Corps is forward deployed and uniquely suited for operating in the littoral regions of the world. As a result, the life-saving and key enabling capabilities that the Marine Corps brings to a humanitarian relief effort are immense. This research sought to identify and evaluate gaps in such USMC capabilities within the competencies of NA and I/KM. A review of relevant research revealed important aspects of the humanitarian sector, such as the nature of humanitarian operations, the way information sharing is conducted between various actors, different types of assessments and their purposes, identification of all the various actors, and a review of USMC readiness metrics. We evaluated four key case studies in which the USMC responded as the leading DoD branch in a JTF: the 2010 Haitian earthquake, the 2011 Japanese tsunami, the 2013 Philippines Typhoon Haiyan, and the 2015 Nepalese earthquake. Additional analysis was conducted on information gathered from personal interviews and formal trainings. By combining lessons from these sources, we developed specific recommendations and readiness metrics for NA and I/KM. It is important to remember that these metrics must be applied to a humanitarian setting in which the USMC is a supporting effort of OFDA. Operating outside of this prescribed role risks high financial costs, excessive burden on the force, and creation of a dependency on aid. By improving HA/DR efficiency and effectiveness, the USMC can save lives, alleviate human suffering, and bolster international relations. The well-grounded findings of this research related to NA and I/KM offer a basis of understanding for USMC planners to apply in any foreign natural HA/DR setting.

C. FUTURE RESEARCH

While this research explores needs assessments and information/knowledge management, further research needs to be conducted to develop readiness metrics for deployment and distribution, supply, health service support, and collaboration and governance in HA/DR operations. These remaining competencies are critical in HA/DR operations and must be thoroughly investigated in order to provide a full list of readiness metrics to the USMC. Furthermore, this series of research focuses on foreign natural disasters, which leaves both domestic and complex disasters to be evaluated. The

USMC may operate in any of these three types of disasters and must be equally prepared for each. As this thesis was being written, two separate joint task forces were created to respond to damages caused by hurricanes in Texas, Florida, Puerto Rico, and the Caribbean islands. In settings such as this, different conclusions, metrics, and best practices will be identified. Understanding the different dynamics of these operations is very important for USMC planners.

Several findings in this research also merit additional investigation, specifically, the opportunity for the USMC to bolster USAID/OFDA with information analysis capabilities during disasters. The USMC's information analysis capabilities with specialties including topographic, imagery, open source information, and METOC, represent a huge opportunity to aid USG and international humanitarian efforts. Another specific finding in our research that merits additional investigation is the repetitive lack of sufficient bandwidth and suitable communications networks for a joint task force–sized HA/DR response. This finding was present in all four cases and has the potential to seriously impact a DoD response. Solutions to this deficiency offered in this research need to be further scrutinized to develop actionable options for a Joint Task Force.

Lastly, throughout the research, issues with the Overseas Humanitarian, Disaster, and Civic Aid (OHDACA) Appropriation consistently came up. Specifically, during the Japanese disaster, the JSDF generated many of the requests for assistance directly to the DoD. The DoD coordinated directly with the JSDF to complete the tasks. This is often referred to as *mil to mil* requests. However, OFDA must validate the requests for them to be reimbursable under OHDACA. In the case of Japan, many requests appeared to be completed and then validated later by OFDA. Therefore, the standard protocol for processing and validating requests through a MITAM appeared to be broken or simply ignored. Additionally, in the Japan case, the nuclear disaster challenged the OHDACA funding process. The question was, does OHDACA funding apply to the relief efforts to support the nuclear crisis? Future research should investigate the OHDACA funding process and identify a clear set of standards for how the DoD responds to disasters and requests OHDACA funding. This research is needed to provide more transparency and accountability to the appropriation process.

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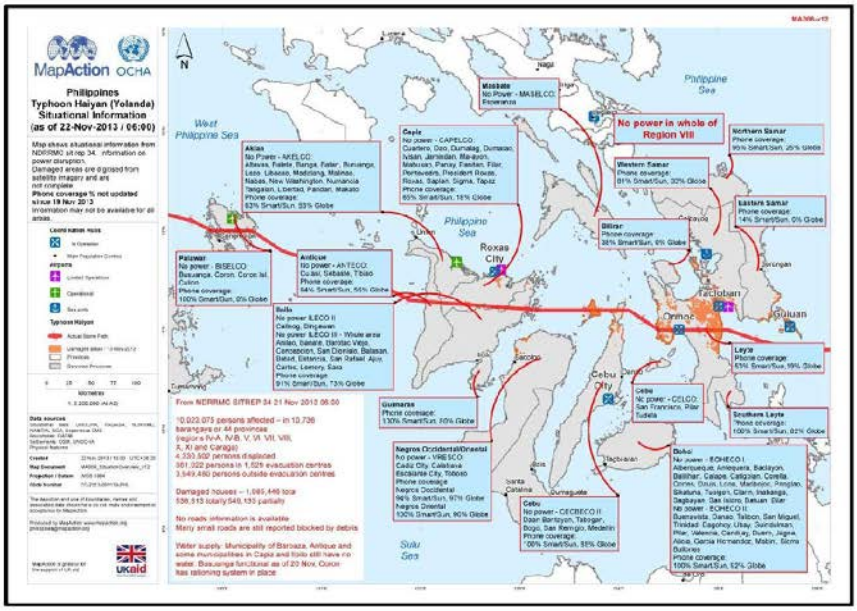
APPENDIX A. EXAMPLE INFORMATION SUMMARY

Source: Joint Task Force 505 (2013).

UNCLASSIFIED

JTF-505 INFOSUM

Date: 20131123 1500I
Serial: PHL-HADR INFOSUM 008-13



Contents:

UNCLASSIFIED

JTF-505 INFOSUM

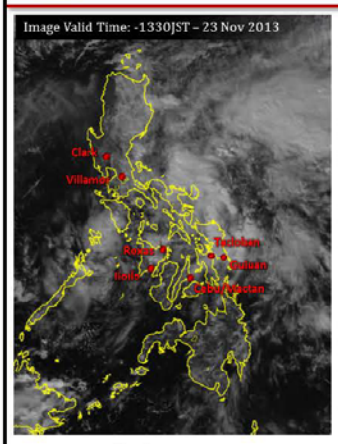
Population Affected	10 million (Source: www.ndrrmc.ph.gov)
Deaths	5,209 (Source: www.ndrrmc.ph.gov)
Injured	23,404 (Source: www.ndrrmc.ph.gov)
Displaced	4.3 million being served at Evac centers (Source: www.ndrrmc.ph.gov)
Evacuation Centers	1,511 (Source: www.ndrrmc.ph.gov)
Relief Needs	• Safe water for drinking hygiene and sanitation • Food • Fuel for vehicles, water purification, and food preparation • Rice seeds and fertilizer for upcoming Dec/Jan planting season to safeguard Mar/Apr harvest • Immediate shelter from the elements • Treatment of acute medical conditions (including contagious diseases) • Treatment for malnutrition and other severe chronic disease (Source: http://www.unocha.org/crisis/typhoonhaiyan)

1. **Weather:**

JTF-505 INFOSUM

Unclassified

Operation DAMAYAN



Expect vicinity thunderstorms in Luzon. Heavy rain showers and thunderstorms will be seen in the central islands.

Date	Sun- 24 Nov		Mon- 25 Nov		Tue- 26 Nov		Wed- 27 Nov	
Clark / Villamor								
Temps	88°F	73°F	86°F	75°F	85°F	72°F	89°F	71°F
Vis / Wx	6 miles in rain		5 miles in rain		4 miles in rain		5 Miles in rain	
Winds	NE 8-10 Knots		NE 8-10 Knots		NE 8- 10 Knots		NE 8-10 Knots	
Personnel	T	T	T	T	T	T	T	T
Air Ops	C	C/Z	C	C/Z	C		C	
ISR	C	C	C	C	C		C	

Date	Sun- 24 Nov		Mon- 25 Nov		Tue- 26 Nov		Wed- 27 Nov	
Tacloban/ Guiuan								
Temps	83°F	73°F	85°F	73°F	84°F	705F	86°F	72°F
Vis / Wx	3 miles in rain		4 miles in rain		3 miles in rain		6 miles in rain	
Winds	NE 12G20 Knots		NE 10-12 Knots		NE 10-12 Knots		NE 10-12 Knots	
Personnel	T	T	T	T	T	T	T	T
Air Ops	C	C/Z	C	C	C/Z	C/Z	C	
ISR	C	C	C	C	C	C	C	

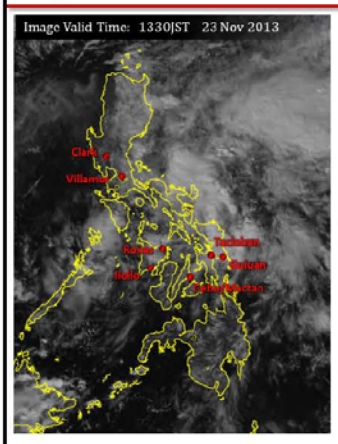
Z = Thunderstorms F=Flooding P=Precipitation F=Fog C=Cloud Ceiling V=Visibility W=Winds T= Temperature

Unclassified

Updated: 1400JST – 23 Nov 2013

Unclassified

Operation DAMAYAN



Expect vicinity thunderstorms in Luzon. Heavy rain showers and thunderstorms will be seen in the central islands.

Date	Sun- 24 Nov		Mon- 25 Nov		Tue- 26 Nov		Wed- 27 Nov	
Cebu/ Mactan								
Temps	88°F	75°F	89°F	74°F	86°F	77°F	85°F	78°F
Vis / Wx	5 miles in rain		6 miles in rain		4 miles in rain		3 miles in rain	
Winds	NE 12 Knots		NE 10-12 Knots		NE 8-10 Knots		NE 10-12 Knots	
Personnel	T	T	T	T	T	T	T	T
Air Ops	C	C/Z	C	C	C/Z	C/Z	C/Z	C/Z
ISR	C	C	C	C	C	C	C	C

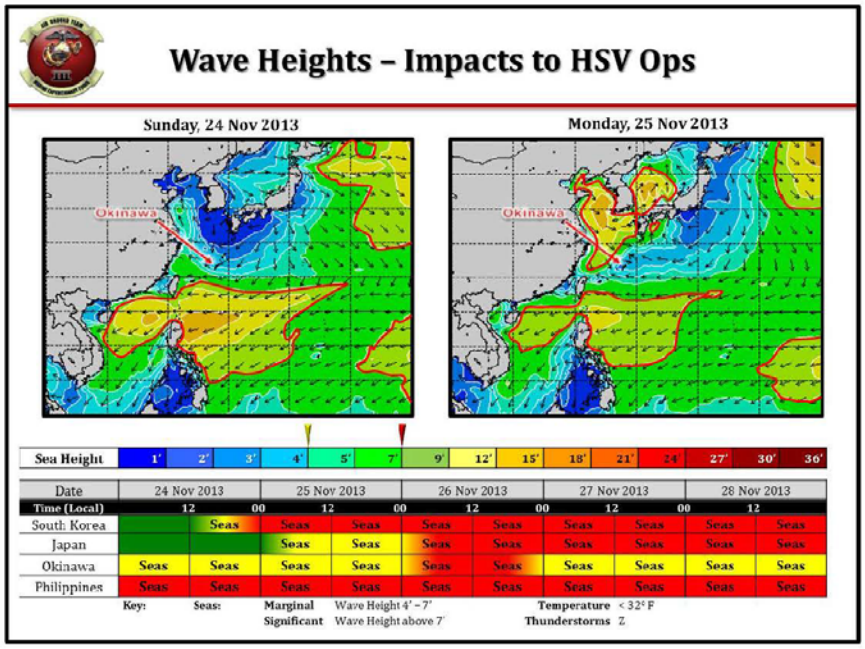
Date	Sun- 24 Nov		Mon- 25 Nov		Tue- 26 Nov		Wed- 27 Nov	
Roxas / Iloilo								
Temps	85°F	75°F	88°F	73°F	87°F	74°F	86°F	72°F
Vis / Wx	3 miles in rain		4 miles in rain		5 miles in rain		4 miles in rain	
Winds	NE 12G22 Knots		NE 10-12 Knots		NE 10-12 Knots		NE 10-12 Knots	
Personnel	T	T	T	T	T	T	T	T
Air Ops	C	C/Z		C	C	C/Z	C	C/Z
ISR	C	C/Z		C	C	C	C	C

Z = Thunderstorms F=Flooding P=Precipitation F=Fog C=Cloud Ceiling V=Visibility W=Winds T= Temperature

Unclassified

Updated: 1400JST – 23 Nov 2013

JTF-505 INFOSUM



2. **Priority Information Requirements (PIR):**
   1. Is there any forecasted weather event that may disrupt HADR operations or threaten Coalition Forces in the area of operations?
   2. What are the locations of concentrations of affected population in need of HADR support?
   3. What is the status of key infrastructure (HLZs, APODs, SPODs, LOCs, Bridges) needed to support HADR operations in the affected area?
   4. What are the threats (criminal, insurgent, terrorist, or medical) to Coalition Forces and the population within the affected areas?
   5. What are the Hazardous Material threats (industrial waste, environmental damage) to Coalition Forces and the population within the affected area?
3. **Executive Overview:** The Rehabilitation Phase continues throughout the Visayas as the Government of the Republic of the Philippines (GRP) encourages local residents to reopen their businesses. The humanitarian organizations operating in the Philippines continue to coordinate with the GRP to ensure humanitarian aid reaches affected areas through a structured distribution system indicating a declining reliance on JTF 505. The Communist Party of the Philippines (CPP) declared ceasefire between the CPP and GRP will end on 24 November 2013. We assess the New People's Army (NPA) will not directly target U.S. or other foreign forces during Operation DAMAYAN. However, recent reporting indicates the NPA may resume operations against the Philippine government in the Visayan Islands of Samar and Leyte soon after the cease fire ends. While the NPA is not likely to attack U.S. or foreign troops directly, an increase in NPA activities could pose a threat to forces in proximity of AFP troops. Additionally, open source reports the Chinese Navy hospital ship "Peace Ark" sailed on 21 Nov 13 in order to provide medical support to the Government of the Republic of the Philippines (GRP), however

we have no confirmation the GRP has requested this form of assistance or authorized the "Peace Ark" to enter Philippine waters.

4. **Tacloban Situation:** On 22 November, the Philippine's Department of Trade and Industry began selling basic goods at discounted prices. As part of the rehabilitation process, these Diskwento (discount) Caravans are intended to help locals purchase goods without fear of price gouging and help stimulate the economy. Business owners were encouraged to begin opening their stores, with assurance from the PNP that the security situation will remain under control. As reported in the 21 November INTSUM, relief supplies arrived at Tacloban Port.
5. **Guiuan:** Preparations continue in preparation for the transfer responsibilities of relief efforts to the Philippine Marine Corps.
6. **Ormoc/Southern Leyte General Situation:** Reporting indicates the health care system has returned to normal, but supplies are running low. On 22 November, the Canadian Red Cross opened a field hospital in Ormoc.
7. **Security Situation:** The security situation is stable. The people have shown no hostile intent towards US Forces throughout the ongoing operations.
8. **Analyst Comment:** Relief supplies continue to flow into ports and airfields, however due to extensive damage in areas south of Tacloban and inland movement of supplies will continue to rely on helicopters.
9. **Threat:** The Communist Party of the Philippines (CPP) declared ceasefire between the CPP and GRP will end on 24 November 2013. We assess the New People's Army (NPA) will not directly target U.S. or other foreign forces during Operation DAMAYAN. However, recent reporting indicates the NPA may resume operations against the Philippine government in the Visayan Islands of Samar and Leyte soon after the cease fire ends. While the NPA is not likely to attack U.S. or foreign troops directly, an increase in NPA activities could pose a threat to forces in proximity of AFP troops.
10. **Collections Summary:** There were (0) Requirements submitted to JTF 505 over the past 24 hours. (254) of (279) requirements were satisfied in total. The P-3 remains in a READY 2 status (power on the aircraft, unfueled, crew in hangar) until requirements demand ISR support, which resulted in no airborne ISR flights over the past 24 hours and no ISR flights scheduled over the next 24 hours. CI/HUMINT maintains their focus on protecting the force and gathering atmospherics. Over the past 24 hours there were (10) FPIRs published bringing the total to (75) FPIRs produced.
11. **JTF Overview**

    JFLCC/3d MEB: Throughout the affected area, humanitarian cargo is being channeled through a structured system organized by humanitarian agencies in coordination with the GPH, indicating a declining need for unique U.S. military logistics support. Business owners are being encouraged to begin opening their stores. Although typhoid and dengue are endemic in affected areas and health experts expect some cases to appear, no disease outbreaks have been reported to date. Although the health care system has returned to normal in Ormoc, medical supplies are running low.
12. **Sources:**
    a. **NDRRMC SITREP #35**
    b. **3d MEB INTSUM 22 November**
    c. **UN OCHA Typhoon Haiyan Action Plan Nov 013**
    d. **UN OCHA Typhoon Haiyan SITREP No. 16**
13. **Other Links:**

JTF-505 INFOSUM

Relief Web http://www.reliefweb.int
UN OCHA http://www.unocha.org/
USAID http://www.usaid.gov/haiyan
APAN www.apan.org
NDRRMC http://www.ndrrmc.gov.ph/
III MEF G-2 Sharepoint https://portal.mce.iiimef.usmc.mil/staff/G2/IRP/Pages/Haiyan.aspx

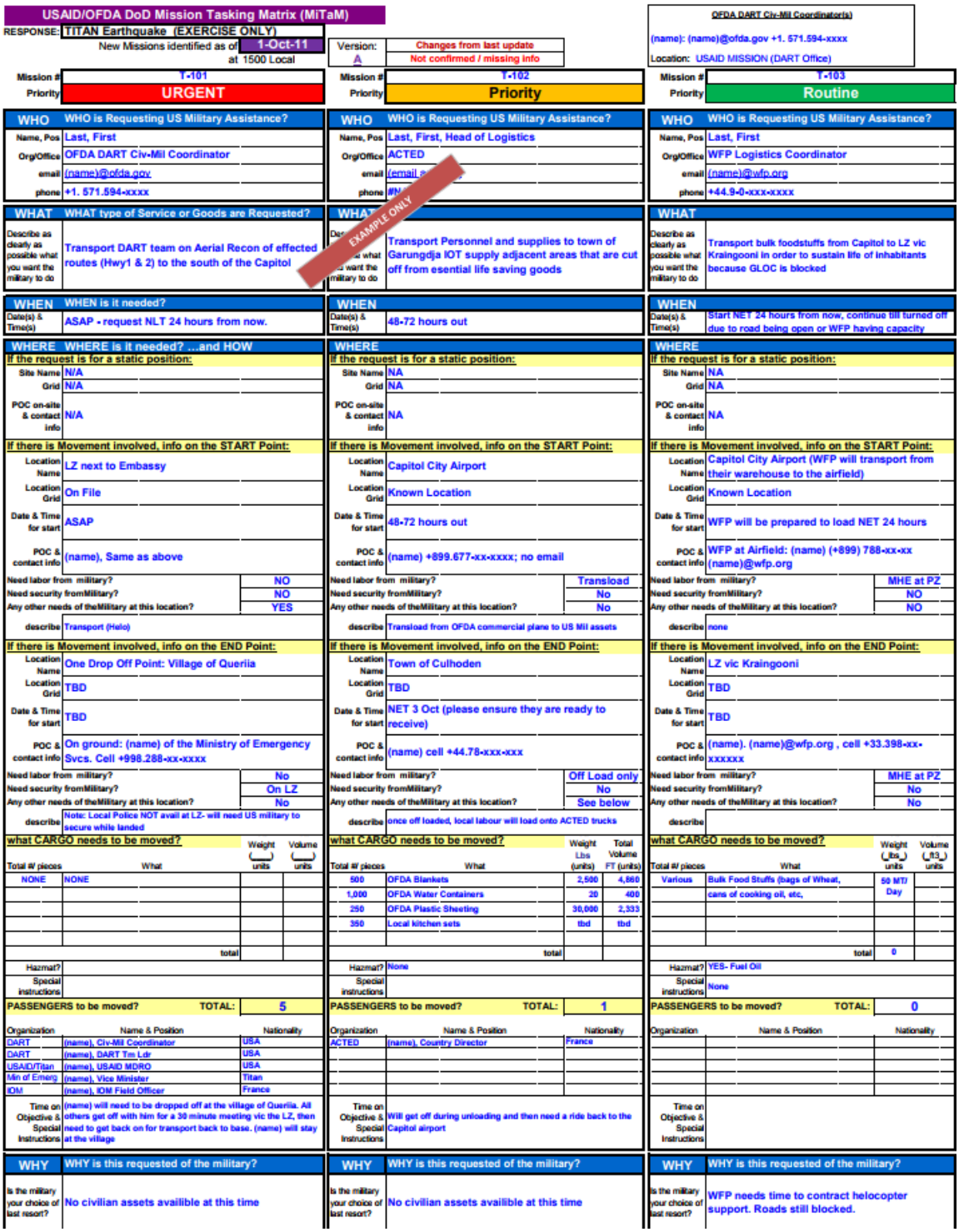
14. **Additional Graphics:**

Armed Forces of the Philippines along with U.S Marines, sailors, and volunteers offload relief supplies from an MV-22B Osprey

Citizens affected by the typhoon, board a KC-130J Super Hercules at Guiuan Airfield, Philippines, Nov. 21, 2013.

APPENDIX B. EXAMPLE MITAM

Source: USAID (2016).



USAID/OFDA DoD Mission Tasking Matrix (MiTaM)

RESPONSE: TITAN Earthquake (EXERCISE ONLY)
New Missions identified as of 1-Oct-11 at 1500 Local

Version: A — Changes from last update / Not confirmed / missing info

OFDA DART Civ-Mil Coordinator(s)
(name): (name)@ofda.gov +1. 571.594-xxxx
Location: USAID MISSION (DART Office)

	Mission # T-101	Mission # T-102	Mission # T-103
Priority	URGENT	Priority	Priority: Routine

	Mission # T-101	Mission # T-102	Mission # T-103
WHO	WHO is Requesting US Military Assistance?	WHO is Requesting US Military Assistance?	WHO is Requesting US Military Assistance?
Name, Pos	Last, First	Last, First, Head of Logistics	Last, First
Org/Office	OFDA DART Civ-Mil Coordinator	ACTED	WFP Logistics Coordinator
email	(name)@ofda.gov	(email a	(name)@wfp.org
phone	+1. 571.594-xxxx	#N	+44.9-0-xxx-xxxx
WHAT	WHAT type of Service or Goods are Requested?	WHAT	
Describe as clearly as possible what you want the military to do	Transport DART team on Aerial Recon of effected routes (Hwy1 & 2) to the south of the Capitol	Transport Personnel and supplies to town of Garungdja IOT supply adjacent areas that are cut off from esential life saving goods	Transport bulk foodstuffs from Capitol to LZ vic Kraingooni in order to sustain life of inhabitants because GLOC is blocked
WHEN	WHEN is it needed?	WHEN	
Date(s) & Time(s)	ASAP - request NLT 24 hours from now.	48-72 hours out	Start NET 24 hours from now, continue till turned off due to road being open or WFP having capacity
WHERE	WHERE is it needed? ...and HOW	WHERE	
If the request is for a static position:			
Site Name	N/A	NA	NA
Grid	N/A	NA	NA
POC on-site & contact info	N/A	NA	NA
If there is Movement involved, info on the START Point:			
Location Name	LZ next to Embassy	Capitol City Airport	Capitol City Airport (WFP will transport from their warehouse to the airfield)
Location Grid	On File	Known Location	Known Location
Date & Time for start	ASAP	48-72 hours out	WFP will be prepared to load NET 24 hours
POC & contact info	(name), Same as above	(name) +899.677-xx-xxxx; no email	WFP at Airfield: (name) (+899) 788-xx-xx (name)@wfp.org
Need labor from military?	NO	Transload	MHE at PZ
Need security fromMilitary?	NO	No	NO
Any other needs of theMilitary at this location?	YES	No	NO
describe	Transport (Helo)	Transload from OFDA commercial plane to US Mil assets	none
If there is Movement involved, info on the END Point:			
Location Name	One Drop Off Point: Village of Querlia	Town of Culhoden	LZ vic Kraingooni
Location Grid	TBD	TBD	TBD
Date & Time for start	TBD	NET 3 Oct (please ensure they are ready to receive)	TBD
POC & contact info	On ground: (name) of the Ministry of Emergency Svcs. Cell +998.288-xx-xxxx	(name) cell +44.78-xxx-xxx	(name). (name)@wfp.org , cell +33.398-xx-xxxxxx
Need labor from military?	No	Off Load only	MHE at PZ
Need security fromMilitary?	On LZ	No	No
Any other needs of theMilitary at this location?	No	See below	No
describe	Note: Local Police NOT avail at LZ- will need US military to secure while landed	once off loaded, local labour will load onto ACTED trucks	

what CARGO needs to be moved?

Total # pieces	What	Weight (__) units	Volume (__) units
NONE	NONE		
	total		

Hazmat?
Special instructions

PASSENGERS to be moved? TOTAL: 5

Organization	Name & Position	Nationality
DART	(name), Civ-Mil Coordinator	USA
DART	(name), DART Tm Ldr	USA
USAID/Titan	(name), USAID MDRO	USA
Min of Emerg	(name), Vice Minister	Titan
IOM	(name), IOM Field Officer	France

Time on Objective & Special Instructions: (name) will need to be dropped off at the village of Querlia. All others get off with him for a 30 minute meeting vic the LZ, then need to get back on for transport back to base. (name) will stay at the village

what CARGO needs to be moved?

Total # pieces	What	Weight Lbs (units)	Total Volume FT (units)
500	OFDA Blankets	2,500	4,860
1,000	OFDA Water Containers	20	400
250	OFDA Plastic Sheeting	30,000	2,333
350	Local kitchen sets	tbd	tbd
	total		

Hazmat? None
Special instructions

PASSENGERS to be moved? TOTAL: 1

Organization	Name & Position	Nationality
ACTED	(name), Country Director	France

Time on Objective & Special Instructions: Will get off during unloading and then need a ride back to the Capitol airport

what CARGO needs to be moved?

Total # pieces	What	Weight (lbs_) units	Volume (ft3_) units
Various	Bulk Food Stuffs (bags of Wheat, cans of cooking oil, etc,	50 MT/ Day	
	total	0	

Hazmat? YES- Fuel Oil
Special instructions: None

PASSENGERS to be moved? TOTAL: 0

Organization	Name & Position	Nationality

Time on Objective & Special Instructions

	Mission # T-101	Mission # T-102	Mission # T-103
WHY	WHY is this requested of the military?	WHY is this requested of the military?	WHY is this requested of the military?
Is the military your choice of last resort?	No civilian assets availible at this time	No civilian assets availible at this time	WFP needs time to contract helocopter support. Roads still blocked.

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